

## Comment Letters

### Introduction and Index

This section of the RAB Documents Page contains 20 examples of comment letters written by citizen members of the Restoration Advisory Board between 1996 and 2013. The letters concern the environmental cleanup, or remediation, of the Presidio, a 1,491-acre Army base that became a national park in 1994. Some of these letters are cited in the Presidio of San Francisco Restoration Advisory Board Final Report, which can be found at this link: [Final Report](#)

The remediation of petroleum contamination, hazardous substances and lead-based paint in soil at the Presidio was begun by the Army in the 1980s and completed by the Presidio Trust between 1999 and 2014. Our RAB was formed in 1994 and voluntarily disbanded in 2014 when the cleanup of known contamination was essentially complete.

The purpose of a RAB is to provide community advice to decision-makers and serve as a forum for public discussion of the environmental cleanup of a military base. Thus, comment on remediation documents was an important part of the role of our RAB. We estimate that during the two decades, the citizen members of the RAB (also known as community members) submitted dozens of group or individual comments to the Army, Trust and/or regulatory agencies.

The sample letters and reports in this section were chosen either because of their importance or to illustrate the range of comments submitted by RAB members. They include both group and individual comments by RAB members.

Some of the letters in this file concern cleanup plans prepared in the Presidio's CERCLA Cleanup Program for hazardous substances regulated under the federal Comprehensive Environmental Response, Compensation, and Liability Act. This program addressed more than 60 sites, including more than a dozen large waste landfills, at the Presidio. The California Department of Toxic Substances Control (DTSC) was the regulatory agency with oversight of the program. The CERCLA process requires public comment periods at three different stages: during the preparation of a Remedial Investigation, a Feasibility Study and a Remedial Action Plan for a site or group of sites. This section includes examples of comments on all three types of documents.

Other items in this section are examples of reports on research by RAB members, a RAB group letter to federal legislators concerning lead-based paint in soil, a group letter to a state senator concerning Mountain Lake, and a link to a video of comments by a RAB community member at a San Francisco Board of Supervisors committee hearing on Mountain Lake.

The first letter in this section is a RAB group comment of September 10, 1997, on the Army's Final Feasibility Study Report for the Main Installation, a set of several dozen sites that

included most of the Presidio's landfills. As is recounted in the RAB Final Report, the Army's plan would have left most of the contamination in place, in some cases with containment caps, ongoing monitoring, land use restrictions and/or limited excavation. The RAB letter was one of more than 50 public comments in which the National Park Service, the Presidio Trust, other agencies, organizations and individuals advocated a more thorough cleanup as being more suitable for a national park. Later, after taking over the remediation responsibility in 1999, the Presidio Trust conducted additional investigations and issued a Revised Feasibility Study in 2003 that planned a more extensive cleanup.

The RAB's 1997 letter is placed first in the series below because it serves as an introduction to some of the important contamination sites and issues at the Presidio. The remaining sample letters are given in chronological order.

The examples of comment letters in this file are as follows:

1. September 10, 1997, group comment letter by RAB community members to Army and DTSC on the Final Feasibility Study Report, Main Installation
2. February 9, 1996, comment letter by RAB community member Mark Youngkin to Army on the Draft Final Remedial Investigation Report
3. June 13, 1996, comment letter by RAB community member Mark Youngkin to Army on the Draft Final Remedial Investigation Report, Building 609, Commissary Investigation
4. November 1996, Building Cross-Reference Table submitted by RAB community member Mark Youngkin to Army and regulatory agencies
5. April 9, 1997, advisory report by three RAB community members to Army on Battery Caulfield, Nike Missile Site
6. May 20, 1998, group comment letter by RAB community members to DTSC and Army presenting list of deficiencies and proposals related to the Final Feasibility Study Report
7. September 1, 1998, group letter to Senators Dianne Feinstein and Barbara Boxer and Representative Nancy Pelosi concerning lead-based paint in soil around non-residential buildings at the Presidio
8. May 16, 2000, comment letter by RAB community member Doug Kern to Presidio Trust concerning Main Installation Field Sampling Plan
9. July 10, 2002, group comment letter by RAB community members to Presidio Trust and DTSC on the Draft Remedial Action Plan and Evaluation of Alternatives for Landfill 4 and Fill Site 5

10. July 8, 2003, group comment letter by RAB community members to Presidio Trust on the Revised Feasibility Study for Main Installation Sites
11. February 17, 2004, group letter by RAB community members to State Senator Joseph Dunn concerning Mountain Lake
12. March 8, 2005, group comment letter by RAB community members to Presidio Trust and DTSC on the Draft Remedial Action Plan, Baker Beach Disturbed Areas 1, 1A, 2 and 2A and Twenty-Seven Other Sites
13. February 25, 2008, video of comments by RAB community member Doug Kern at San Francisco Board of Supervisors Land Use Committee hearing
14. January 17, 2009, comment letter from RAB community member Doug Kern to DTSC and Presidio Trust on the Draft Remedial Action Plan, Landfills 8 and 10
15. April 17, 2010, group comment letter by RAB community members to DTSC on the Draft Remedial Action Plan for Fill Site 1, Landfill 2 and El Polin Spring
16. April 13, 2011, group comment letter by RAB community members to DTSC on the Draft Feasibility Study/Remedial Action Plan for Landfill E
17. April 20, 2011, comment letter by RAB community member Doug Kern to DTSC on the Draft Feasibility Study/Remedial Action Plan for Landfill E and on Field Sampling Report and Remedial Investigation Summary, Landfill E and Barnard Avenue Protected Range
18. May 3, 2012, comment letter by RAB community member Mark Youngkin to DTSC on the Proposed Draft Feasibility Study and Remedial Action Plan for Mountain Lake
19. May 8, 2012, excerpt of slide presentation at RAB meeting by community member Mark Youngkin to RAB agency and community members on the North Arm of Mountain Lake
20. February 4, 2013, group comment letter by RAB community members to DTSC and Presidio Trust on the Draft Feasibility Study and Remedial Action Plan for Baker Beach Disturbed Areas 1A and 2

Comment letter example #1

September 10, 1997, group comment letter by RAB community members to  
Army and DTSC on the Final Feasibility Study Report, Main Installation





Community Members  
Presidio Restoration Advisory Board  
Care of Mark Youngkin  
PO Box 640324  
San Francisco, CA 94164

September 10, 1997

Mr. David Wilkins, BRAC Environmental Coordinator  
Department of the Army, Headquarters, I Corps and Fort Lewis,  
BRAC Environmental Office, 604 Murray Circle,  
East Fort Baker, Sausalito, CA 94965

Mr. Romy Fuentes  
Department of Toxic Substances Control  
700 Heinz Avenue # 200  
Berkeley, CA 94710-2737

Dear Sirs,

Re: Comments by Community Members of the Restoration Advisory  
Board on the Final Feasibility Study Report, Main Installation,  
Presidio of San Francisco

The undersigned Community Members of the Restoration Advisory Board (RAB) provide the following comments concerning the Feasibility Study received in June 1997. We have based these comments on a review of the document, comments submitted by technical members and discussions with various technical experts.

As community members of the RAB, we take this task of commenting on the Feasibility Study very seriously. We note that the RAB has been described by the Army as "a focal point for the exchange of information, concerns, values, and needs between the community, the military and regulatory agencies" and as a means of "improving the soundness of government decisions, ensuring that the cleanup is responsive to community needs." RAB community members are concerned about human health and the environment including animal and plant protection on the Presidio. We believe that the Army and its contractors have a number of areas for improvement in this document. Our goal is to deliver a national park that is cleaned to a level consistent with the best and most flexible reuse scenarios consistent with Presidio master plans.

The following comments represent our major concerns.

## **GENERAL COMMENTS**

### **1. Reuse as a national park**

Community members believe the public has the right to enjoy a safe and clean national park with the use of park resources unrestricted to the extent feasible. The Presidio is unique because it is the only former military base to become a national park and is expected to be one of the most heavily visited national parks in the nation. It should be cleaned to the highest standards. The remedial alternatives recommended in the Feasibility Study would jeopardize full and safe use of the park because they would leave contamination in place and restrict public use of some of the land. Institutional controls provide uncertain or impermanent protection for public health and the environment in a national park.

### **2. Community acceptance**

Community acceptance is one of nine criteria specified in the U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) for evaluating alternatives for responding to pollution. We strongly believe that a number of aspects of the Feasibility Study are not acceptable to the community. For example, as we discuss in more detail below, the use of institutional controls including fences and signs to restrict land, groundwater and surface water use is not acceptable to the public at sites such as Fill Site 1, Landfill 2, Landfill 4 and El Polin Spring. Leaving contamination in place is not acceptable at a number of the sites suggested because park visitors, park workers and volunteers engaged in environmental restoration and Presidio residents including children who live near polluted sites could be endangered. These views pertaining to community acceptance have been expressed on the record by RAB community members at RAB meetings and by other representatives of the public at the Public Discussion Meeting held by the Army on Sept. 3, 1997.

### **3. Removal of contamination**

The Feasibility Study is too heavily weighted toward leaving contamination in place, with institutional controls and monitoring, rather than removing the contamination. We find it disturbing that of the \$36 million expenditure proposed by the study for a 30-year period, \$34.5 million would be spent on institutional controls and monitoring and only \$1.5 million would be spent on actual clean-up. We believe this approach would place legal, financial and administrative burdens on the National Park Service and the Presidio Trust that are not accounted for in the study. The Trust's ability to meet its mandate for fiscal self-sufficiency would be jeopardized. The National Park Service's ability to carry out restoration and reuse plans would be curtailed and the public's use and enjoyment of the park



would be diminished. The report does not account for increased hazards and exposure that could occur in contamination left in place over time as a result of changes such as erosion, earthquakes and interactions of chemicals within a landfill. It does not say what the proposed institutional controls are or how they would be enforced. Removal of contamination provides a permanent solution and eliminates uncertainties about future hazards and costs.

#### **4. Cost estimates analysis**

The cost estimates given in the Feasibility Study for removal of contamination appear to be too high, thus skewing the analysis in favor of institutional controls and no action, rather than removal. At the request of RAB community members, IT Corporation, the contractor selected by the Army to carry out remedial operations at the Presidio, supplied alternative cost figures. IT Corporation figures show that in many cases the costs of removing landfills is comparable to the proposed expenditure for institutional controls and monitoring. For example, the cost of removing Fill Site 1, Landfill 2, Fill Site 6 and water contamination at El Polin Spring in the Tennessee Hollow watershed is less than the cost of the proposed controls and monitoring at those sites. In addition, the future hidden costs to the Presidio Trust and the National Park Service of leaving pollution in place are not accounted for in the cost estimates.

#### **5. Risk assessment**

Technical member comments and our own reviews suggest that there are a number of significant problems with the human health and ecological risk assessments underlying the conclusions of the Feasibility Study. For example, at some sites the number of samples taken was very limited. At other sites, numerous samples were excluded from consideration because they fell below a 6-inch depth limit set by the study for human risk analysis at many sites and at or below a 3-foot limit set for ecological analysis. We note incidentally that people could be exposed to soil below 6 inches as a result of erosion or park maintenance activities such as removing dead trees from a landfill. Fill Site 1, Landfill 4, Fill Site 5, and Graded Area 9 are examples of areas where the very limited number of samples considered does not allow for confidence in the human health risk analysis. Adequate sampling is especially important at landfills because of the varied nature of fill material. The U.S. Environmental Protection Agency points out that the limited sampling may not have identified all the "hot spots" at the several sites for which hot-spot excavation of hazardous contamination is recommended.

Finally, the study's recommendation for future biological verification sampling at institutional control sites appears to suggest that the risk assessment

in the Feasibility Study is incomplete, thus calling into question whether final remedies can be determined on the basis of that assessment. (The risk assessment for a given site would not need to be revisited, however, if a permanent remedy such as excavation of contaminated soil or treatment of polluted groundwater were selected.) We also agree with the EPA that if future sampling is needed at the institutional control sites, it is logical to require it at the no-action sites as well.

## **6. Groundwater protection**

Groundwater is not adequately protected under the assumptions of the Feasibility Study. We advocate that the State Water Quality Control Board's "Nondegradation Policy," Resolution 68-16, should be followed at the Presidio in view of its special status as a national park. This policy states that the waters of California should be cleaned to their former unpolluted condition. The study conflicts with the National Park Service's General Management Plan Amendment by discounting groundwater as a drinking water source. The GMPA states that groundwater may be used as potable and nonpotable water resources at the Presidio. Groundwater from springs was historically used as a drinking water supply at the Presidio.

We are also concerned that the potential groundwater yield was not adequately assessed in the Feasibility Study because the yield was estimated from wells that were designed for monitoring rather than for testing total yield and the samples were taken in the dry summer months. In addition, at five sites considered in the Feasibility Study, wells that showed a yield of more than 200 gallons per day (the state standard for a potential groundwater resource) were inappropriately screened out of the analysis by being averaged with other wells with lower yields at the same site.

## **7. Lead contamination**

We are concerned that the Feasibility Study fails to address lead paint contamination in soil, one of the most significant types of pollution at the Presidio, around the many non-residential buildings at the installation. This contamination could endanger visitors, occupants of the Presidio and park maintenance workers and leave open the possibility of future litigation. The U.S. Environmental Protection Agency has clearly stated that this contamination belongs in the Remedial Investigation and Feasibility Study. We urge the Army to investigate and, where needed, remediate lead contamination of soil at non-residential buildings. We also believe that lead contamination at residential sites should be addressed under the CERCLA process rather than HUD guidelines.



## **8. Inadequate historical research**

A number of potentially significant soil and/or groundwater contamination sites were not included in the Feasibility Study as a result of inadequate historical research. Evidence of these sites is contained in historical Army maps, aerial photographs and other records. In early 1996, a RAB community member submitted a list of such sites that appear to present environmental concerns based on these historical records. The sites were nevertheless not included in the revised Remedial Investigation or this Feasibility Study. They include former gas stations, maintenance and repair facilities, dump areas, a metal salvage facility and Battery McKinnon-Stotsenberg (Building 1430 - adjacent to a residential neighborhood and playground). These sites should be documented and investigated for potential contaminants of concern as soon as possible to avoid delays in reuse plans. The failure of the Army to reconcile the missing historical data within the Feasibility Study may have resulted in erroneous investigations at an unknown number of sites (the Commissary Building 609, discussed below, appears to be one example).

## **SITE-SPECIFIC COMMENTS**

### **9. Landfills**

Community members believe landfills containing hazardous substances should be removed where feasible. The Presidio contains 17 landfills, fill sites and disturbed areas formerly used for disposal of various types of waste and debris. Fifteen of them are within the scope of the Main Installation Feasibility Study. A number of the dumpsites were placed without scientific engineering in ravines containing streams and spring areas. Contamination in ground water and surface water, percolating through the fill material, is carried through the watershed down-slope of the landfills. For example, groundwater and surface water from Fill Site 1, Landfill 2 and Landfill E carry contamination into the Tennessee Hollow watershed and the planned Crissy Field wetlands. Waters from Fill Site 1 and Landfill 2 carry pollution into El Polin Spring as well.

The study does not propose to remove any of the landfills and instead recommends institutional controls, hot spot excavation, no action, or, in the case of Landfill E, a soil cover plus institutional controls. The proposal to leave the landfills in place would allow the waterborne contamination of springs, watersheds and wetlands to continue indefinitely. It does not account for future problems of slope stability or possible erosion and flooding that could expose people and wildlife to toxic hotspots.

This approach is contrary to the stated preference of the community for removal of contamination and the EPA guidance on military landfills. Community members of the RAB passed a Landfill Closure Resolution on May 13, 1997, calling for excavation and removal of landfills where feasible. This resolution is attached to this letter as an appendix. The views expressed in this resolution should be considered relevant to the criterion of community acceptance of remedies. The EPA's Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (Interim Guidance), April 1996, states that the planned reuse of the land is an important consideration in the selection of military landfill remedies. The guidance also states that landfills of less than 100,000 cubic yards with high groundwater conditions are candidates for excavation; most of the Presidio landfills, as described in the Feasibility Study, are under this size and are therefore candidates for removal.

#### **10. El Polin Spring**

El Polin Spring, a historic water source for the Presidio, is located in a picnic area within the Tennessee Hollow watershed. We are concerned that the study area for El Polin Spring is so small that it does not provide a full assessment of potential habitat contamination in the area. The surface water in the picnic area flowing from Fill Area 1 and Landfill 2 has not been adequately characterized. Children at the picnic area are commonly seen playing in the water. The proposed institutional controls on the surface water would not be acceptable to the public in this area. Removal of Fill Site 1 and Landfill 2 up-slope from the spring would reduce the contamination there and reduce or eliminate the need for monitoring and institutional controls.

#### **11. Fill Site 1**

The study does not adequately report the sensitive land use of the Fill Site 1 location. A residential structure is located within the eastern boundary of Fill Site 1. Its southern boundary borders the popular Julius Kahn Playground and children are commonly observed playing on the landfill surface. The proposed institutional controls would not be acceptable to the public in this frequently visited area. The fill site is located in a former ravine where fresh water spring habitat and pond formerly existed. The Remedial Investigation and Feasibility Study do not consider a fresh water spring that discharges from the fill material into the surface stream that crosses the El Polin Spring picnic ground. This fresh water discharge could affect the stability of the landfill.



## **12. Landfill 2**

Landfill 2, which covers the now-buried central tributary of the Tennessee Hollow Watershed, is in a forested area 200 yards down-slope from Julius Kahn playground and is used by youths and adults for hiking and exploration. A seasonal spring, at the base of the landfill, flows through the El Polin Spring picnic area for six months of the year. Hazardous chemicals found at the landfill include pesticides. The removal of soils at this site is appropriate, but the proposed hot spot excavation alone is insufficient owing to inadequate characterization. The Feasibility Study does not adequately consider the future use of the site in the restoration of the Tennessee Hollow Watershed or the poor engineering of this landfill. The landfill is located on a steep hillside ravine overlying serpentinite-derived soils susceptible to slope failure. The lower portion of the landfill material is saturated for six months of the year with the discharge of water from the landfill material; this saturation affects the stability and erosion potential of the landfill. The permanence of the landfill is questionable and long-term maintenance of the landfill will likely be required. These hidden costs of long-term maintenance would significantly affect the cost analysis of remedial alternatives. Removal of the landfill appears warranted to eliminate the uncertainties in protecting public health and the environment.

## **13. Landfill E**

Landfill E, in the western tributary of the Tennessee Hollow watershed, is the largest and most polluted landfill on the Presidio. The proposed soil cover is inadequate because it would not control the seasonal water flow through the landfill material to the Tennessee Hollow watershed and Crissy Field wetlands project. This seasonal flow of surface water was never tested for contamination. The soil cover could erode over time increasing the human health risk in future years. Like Landfill 2, Landfill E was never scientifically engineered and presents potential problems of slope instability, erosion and long-term maintenance requirements. More of the contaminated soil should be removed.

## **14. Landfill 4**

Landfill 4 is of concern because it is across a small road from the Rob Hill group camp to the south and near a residential house to the north. The ecological risk assessment suggests that contamination at the site may be hazardous to common birds and small animals. The presence of a cluster of dead trees at the center of the site could suggest toxicity. The National Park Service's General Management Plan designates the site as an area where native plant communities will be restored and protected. The institutional controls proposed by the study would mean that the area could not be used as open space despite its proximity to

the camp used by Boy Scouts and other groups. Leaving the pollution in place would endanger young campers who are likely to explore the area despite controls as well as park workers maintaining the area (e.g., removing the dead trees and thereby coming in contact with contaminated soil). Because of these hazards, institutional controls would not be acceptable. The contaminated soil should be removed.

## **15. Building 609**

The Feasibility Study on Building 609, the Presidio Commissary area, is flawed because it is based on an error in historical research that was pointed out to the Army more than a year ago and never corrected. Although the Commissary was designated as Building 609 when it was built in 1987, historical records show that an earlier Building 609 was located 150 feet to the east. The present Building 609 lies above a former motor pool facility and railroad tank car pumping station. It was studied in the Remedial Investigation for a pesticide spill that occurred in the original Building 609 in 1980. The current Building 609 area was not tested for contamination that might have resulted from the motor pool and pumping and the original 609 site was not studied for pesticide contamination. Although this error was reported to the Army in detailed comments by a RAB community member in May and June 1996, the mistake was perpetuated in the revised Remedial Investigation and the Feasibility Study.

## **16. Buildings 937 and 979**

This former airplane hangar and former storage facility are located within 400 feet and 200 feet of the Bay at the western end of Crissy Field and were at one time used as the main vehicle maintenance facilities for the Presidio. The only action recommended by the Feasibility Study for these sites is institutional controls on groundwater use. We are concerned that solvent contamination of groundwater at Building 979 has likely spread beyond limits indicated by the Army and is currently discharging to the San Francisco Bay, and that petroleum product has been observed floating on the groundwater at Building 937. Petroleum floating product should be removed from the Building 937 groundwater, and monitoring wells of contamination of the Bay at Building 979 should be continued and extended. Bioremediation or natural attenuation remediation should be considered in place of institutional controls.

## **17. Battery Howe Wagner**

This fill site is directly across a street from residential housing and a playground. The Remedial Investigation and Feasibility Study fail to recognize



that it occurs in a drainage where a fresh water spring habitat formerly existed. Field observations by RAB community members indicate that for six months of the year, a fresh water spring discharges from the drainage immediately below the landfill area to a surface stream. Residents of the housing have expressed strong concerns about the contaminated surface water flowing across the road and into the neighboring housing area and playground. This discharge to surface water was not sampled in the Remedial Investigation and represents a serious data gap in the Feasibility Study. Hazardous concentrations of antimony have been found in the soil and hexavalent chromium in the groundwater. The proposed institutional controls are unacceptable because of these hazards and the proximity of the residential playground and housing. The contamination of surface water should be investigated and polluted soil should be removed.

#### **18. Battery Caulfield, Nike Missile Site**

The Feasibility Study needs to be brought up to date in regard to information recently reported by RAB community members (see the Advisory Report on Battery Caulfield, Nike Missile Site, dated April 9, 1997). Each hydraulic oil tank and related piping hold 271 gallons of hydraulic oil; such tanks were not emptied upon the deactivation of Nike sites. Hydraulic equipment appears to remain in place inside the three magazines. Recent reports by Army representatives indicate that petroleum product has been observed floating on the standing water inside one of the underground missile magazines. A small fireproof personnel shelter in each magazine is lined with asbestos that is partly submerged by groundwater. The magazines were painted with lead and zinc based fire-resistant paint that also contains antimony. The magazine water appears to originate from exterior groundwater that seasonally flows within and through the underground structures. The magazines fill up with water, creating the potential for contamination by hydraulic oil, paint, and asbestos. It appears that almost two-thirds of the magazine water may drain into the surrounding groundwater at the Lobos Creek drainage area each summer. The Feasibility Study should discuss remedial measures to address these CERCLA issues. We urge the Army to carry out the proposal announced at the public discussion meeting on September 3, 1997 to remove the hydraulic fluid and drain the magazines.

#### **19. Seasonal wetlands**

The Feasibility Study fails to consider the seasonal wetlands at the Nike Swale and Landfill 2. Data should be collected during the wet season and biological risk estimation should be carried out on aquatic receptors at these sites.

## Conclusion

We believe that the issues discussed above -- such as the lack of community acceptance, questions about the cost estimates and risk assessments, problems associated with leaving contamination in place, and errors in research -- warrant a reconsideration of the recommendations of the Feasibility Study. We look forward to working with you in a collective effort to resolve these issues.

Sincerely,

Jane Bernard-Powers, Saul Bloom, Julia Cheever, Joanne Chow Winship, Mathew Fottler, Arlene Gemmill, Molly Hooper, Julian Hultgren, Rebecca Jehorek, Doug Kern, LeeAnn Lahren, Andrew Lolli, Bruce McKleroy, Scott Miller, Howard Nathel, Peter O'Hara, Louis Rosenbaum, Wesley Skow, Jill Stoner, Mark Youngkin

Community Members of the Restoration Advisory Board, Presidio of San Francisco

Attachment: Landfill Closure Principles and Resolution, May 13, 1997

Cc: Michael Work, U.S. Environmental Protection Agency  
Roberta Blank and Brian Ullensvang, National Park Service  
Richard Hiett, California Regional Water Quality Control Board  
Martha Walters, City of San Francisco  
John Buck, Army Environmental Center  
Roger Henderson, Army Corps of Engineers  
Toby Rosenblatt, Presidio Trust



# **Presidio of San Francisco Restoration Advisory Board**

## **RESOLUTION**

### *Excavation, Recycling and Off-site Consolidation of Presidio Landfills, Fill Sites and Disturbed Areas.*

**WHEREAS**, the Presidio's future reuse and status as a National Park must be carefully protected so that it meets its fiscal goals of self-sufficiency; and

**WHEREAS**, the containment of waste at the Presidio of San Francisco may be inconsistent with the vision, goals and reuse scenarios of the Park; and

**WHEREAS**, institutional controls at the landfills, fill sites and disturbed areas would limit reuse options; and

**WHEREAS**, the location of Presidio landfills, fill sites and disturbed areas in ravines, valleys and low-lying areas where fresh water is known to flow yields ongoing pollution to the environment; and

**WHEREAS**, the landfills, fill sites and disturbed areas at the Presidio contain a variety of recyclable materials and that if those materials were recycled, when appropriate and feasible, the costs of excavation and offsite disposal would be substantially reduced; and

**WHEREAS**, excavation and off-site disposal of landfill, fill site and disturbed area materials has been routinely dismissed as prohibitively expensive without sufficient written estimates, while expenditure estimates of containing wastes on site have not fully considered all the costs of long-term monitoring and maintenance; and

**WHEREAS**, remedies have been selected for certain Presidio landfill sites without community acceptance; now, therefore

**BE IT RESOLVED THAT** the Presidio of San Francisco Restoration Advisory Board fully endorses the April 1997, Presidio Landfill Closure Principles; and

**BE IT FURTHER RESOLVED THAT**, with few exceptions, and until proven otherwise, the Presidio landfills, fill sites and disturbed areas should be excavated, fill materials recycled where appropriate, and remaining materials and hazardous waste consolidated at modern, appropriately designed and monitored off-site disposal facilities.



# **Presidio of San Francisco Landfill Closure Principles April 1997**

## **1. Consolidate—Reduce Wide Distribution of Wastes**

Debris fill, garbage and hazardous waste is spread over seventeen separate Presidio sites where people, plants and animals can be exposed, now or in the future. Consolidation of at least some Presidio landfills onsite or off-site would considerably reduce or, more appropriately, eliminate the widely separated extent of wastes at the Presidio.

## **2. Relocate Small Landfills**

Where landfill areas and volumes are small they can be readily moved. The EPA's April 1996 Guidance, "Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills" recommends that landfills not be moved if they are over 100,000 cubic yards in volume. Most of the Presidio landfills are under 10,000 cubic yards—none are over 100,000 cubic yards (see attached Table 9.0-1 from the Army's Final Remedial Investigation Report, Presidio Main Installation, January 1997). Therefore, according to the guidance all Presidio landfills are candidates for excavation and off-site disposal.

## **3. Reuse of National Park Lands is Unrestricted**

Reuse of the Presidio National Park lands are thoroughly described in the Park Service's General Management Plan Amendment, July 1994 and updated by such reports as the Final Draft Wetland and Riparian Corridor Restoration Feasibility Study, August 1995. These plans required considerable time and effort to develop and involved a great degree of community input. Nevertheless, as the final plans for a particular site emerge, the details may vary, sometimes significantly, from the initial concept. Flexibility for changing reuse scenarios ensures that the Park and the Presidio Trust may employ the best possible site reuse for the Park so that it may achieve its self-sufficiency needs. Therefore, it remains essential that institutional controls are not imposed on Presidio contamination sites, limiting the reuse of the property and diminishing its value for the millions of expected Park visitors.

In addition, a 1991 San Francisco Regional Water Quality Control Board Policy regarding foundation piles through closed landfills illuminates hidden costs for construction at capped landfill sites, and suggests that there will likely be substantial compliance costs if Presidio decision-makers decide to build on landfills in the future. These future compliance costs may severely limit reuse at the Presidio landfills and should be considered.

## **4. Clear Waste from Groundwater Saturation Zones**

As indicated in Table 9.0-1 from the Presidio Remedial Investigation (attached), a substantial number of the Presidio landfills were created by dumping debris, garbage and hazardous waste in ravines and low-lying areas where small creeks and seeps existed. These freshwater saturation zones are now the sites of potential ongoing contamination. By relocating wastes in an appropriately designed and monitored off-site disposal facility with modern leachate collection systems, Presidio surface water and percolating groundwater will remain free from future contamination. Wastes should, therefore, be removed from water saturation zones where toxic leaching in toxic amounts is more likely to occur.

## **5. Recycle Building and Construction Debris**

Much of the material in Presidio fill sites is described as debris fill and rubble. These materials are now commonly recycled and need not be sent to a landfill. Recycling materials when appropriate and feasible would reduce the cost of off-site disposal.



## **6. Consider Cost of Remedy Only After Other Threshold Issues are Resolved**

The community must assume that a containment presumptive remedy has been selected at Landfill E, since monies have been spent designing that remedy. According to the EPA's April 1996 Guidance, "Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills," land reuse and community acceptance should be ascertained before a presumptive remedy is implemented. To implement a presumptive remedy, the Administrative Record must contain site-specific information documenting how the presumptive remedy satisfies, among other site-specific remedy selection criteria, community acceptance. Community acceptance is based on examining a site for expected future reuse and alternative remedies for cleanup. The Army should not claim a priori that the cost of excavation and off-site disposal is prohibitive and therefore, excavation is not to be considered—particularly when the community is not given the detailed cost information to evaluate. Once given the detailed cost information the community can assess whether costs for containing wastes in place include sufficient funding for monitoring and cap maintenance. Annual maintenance costs for containing and monitoring landfills could be considerable and would be a permanent additional burden to the Park, suggesting that a permanent removal action may be a more appropriate remedy. Therefore, remedy cost should be considered after all alternatives are reviewed for site reuse and community acceptance.

## **7. The Presidio has Special Status as a National Park**

The Army has stated that it fully recognizes the importance of the historical and recreational resources at the Presidio and its unique status among Base Realignment and Closure (BRAC) sites. However, there is no indication in any reuse scenario described to date that containment of contamination sites on the Presidio furthers some significant future reuse purpose. The containment of waste at the Presidio of San Francisco is entirely inconsistent with the vision, goals and reuse scenarios of the Park. In consideration of the Park's future reuse needs, the current presumption of waste containment at the Presidio should be withdrawn and a serious evaluation of landfill excavation and off-site disposal should be conducted.

## **8. The Cleanup Remedy is Acceptable to the Community**

According to the National Contingency Plan each alternative is assessed against nine evaluation criteria. The ninth criterion, one of the so-called modifying criteria, is that an alternative should be acceptable to the community. The final disposition of Presidio landfills should, therefore, be acceptable to community representatives. While not the only body capable of giving community input regarding the Presidio cleanup effort, the Restoration Advisory Board is the *Army-sponsored*, community input advisory group *and should therefore be consulted*. The Army has not conferred with community representatives from the Restoration Advisory Board regarding disposition of the Presidio landfills. Rather, it has pursued a course of implementing a presumptive remedy, particularly at Landfill E, without community acceptance. As with any site at the Presidio, landfill cleanup alternatives and presumptive remedies must pass the criterion of community acceptance.

## **9. Monitoring**

If after thorough discussions regarding the disposition of each landfill, regulators and community members agree that containing waste at the Presidio is appropriate in a certain situation, then that waste should be contained at a properly monitored site.

Comment letter example #2

February 9, 1996, comment letter by RAB community member  
Mark Youngkin to Army on the Draft Final Remedial Investigation  
Report

February 9, 1996

Mr. David Wilkins, Department of the Army  
Headquarters, I Corps and Fort Lewis, BRAC Environmental Office  
604 Murray Circle, East Fort Baker, Sausalito, CA 94965

Re: Draft Final Remedial Investigation Report Comments by Mark Youngkin  
Community Member, Restoration Advisory Board, Presidio of San Francisco

Dear Mr. Wilkins,

The following comments express my concerns with the Second Revised Draft Final Remedial Investigation Report, Presidio Main Installation (RI Report), dated November 1995.

#### **COMMENT**

In general I agree with the comments of the technical members that the report is difficult to review. The large scope of the document has resulted in a general vagueness in the presentation of data for many individual sites. In a normal professional environmental report, a thorough discussion of the following topics would be required: (1) the history of the environmental operations, (2) the rationale for sample location and analysis methods, (3) summary of prior tank removal or remedial operations, and (4) complete definition of the extent of soil and ground water contamination. By simultaneously discussing so many sites in one document, each individual site has suffered from a lack of report space and data presentation. In order to achieve professional standards of practice, the individual study areas should be separated into individual reports (by chapter in the RI Report) with the proper discussions, data summaries, chemical distribution maps, cross-sections, and photographs for each site.

#### **COMMENT**

The Draft Final Remedial Investigation Report (RI Report) is vague concerning the process used to identify potential contamination sources and sample locations in the remedial investigation. I found that it took an unreasonable amount of time locating and reviewing previous documents to determine the historical research used in the remedial investigation. A concise discussion of the research documents, historical sources, and field reconnaissance results that formed the basis of sample location is needed for all individual sites. It is also critical to understand what historical documents and research were not used to locate samples at each individual building.

#### **COMMENT**

In regard to the identification of significant environmental operations or potential contamination sources, the RI Report primarily references the November 1989 Enhanced Preliminary Assessment Report by the Argonne National Laboratory. The Enhanced Preliminary Assessment Report (EPAR) relies on aerial photo review performed in an interim version of the March 1990, EPA Installation Assessment, Presidio Army Base Closure Program by Bionetics Corporation. Bionetics identified potential contamination sources within the Presidio using aerial photography from 1946 to 1988. The Installation Assessment provides a list of potential contamination sources identified in the aerial photographs. Potential contamination sources listed in the

Installation Assessment did not get transferred verbatim to the EPAR.

Page 100 of the EPAR states concerning disposal/discharge areas, "Only those areas identified on at least two photographs have been included in this discussion". From 1947 to 1963 is a period of 16 years. Does this mean that any activity within this time period and shown on just one photo (1959), would have been dismissed by the authors of the EPAR? Potential contamination sources listed in the Installation Assessment were also dropped for undocumented reasons in the EPAR. Below is a list of the potential contamination sources from the Installation Assessment (identified on aerial photographs), but not discussed in the EPAR or Final Draft Remedial Investigation Report. The underlined text shows the original comments from the installation assessment.

### **1946 photographs:**

#### DA5, Disturbed Area 5: mound, debris, stain

Located at pullout on Washington Blvd. east of the overlook. No sampling is shown in this stain area in the Final Draft Remedial Investigation plates.

#### OS6, Open Storage Area 6: open storage area

This storage area is close to the building 1167 operations. The Final Draft Remedial Investigation plates for building 1167 shows no sampling in the open storage area 6.

### **1959 photographs:**

#### DA6, Disturbed Area 6: (now called landfill E) structures at north end, one of which appears to be an incinerator, stain-wet soil areas

The EPAR does not discuss the incinerator and stained-wet soil information, reporting only activities related to construction of a baseball diamond. The incinerator and stain-wet areas are not shown on the EAPR or Final Draft Remedial Investigation plates for Landfill E. Little sampling is shown on these plates in the area marked as stained-wet soil on the 1959 photos. Sampling is shown in the area of the former incinerator. Did the sampling include analysis appropriate for an incinerator?

#### OS1, Open Storage Area 1: drum storage

Drum storage near building 973 reported both in this year and in 1959. This area is not discussed in the EPAR or Final Draft Remedial Investigation, but significant sampling occurred in this area as part of the Final Draft Remedial Investigation building 937 work. Did the sampling include analysis appropriate for a drum storage area with unknown contents?

#### OS3, Open Storage Area 3: debris and waste

Debris and waste stored at location pre-existing to building 645, sewer lift station number 1. This potential contamination source is not discussed in the EPAR or Final Draft Remedial Investigation, but sampling occurred in this area as part of the Final Draft Remedial Investigation of the sewer lift station. Did the sampling include analysis appropriate for a storage area with



unknown contents? The sampling at this location detected metal contaminants in shallow soil. Could the contaminants be related to prior storage at this location?

OS5, Open Storage Area 5: waste storage

Waste storage at south end of building 1244. This area is not discussed in the EPAR or Final Draft Remedial Investigation. Final Draft Remedial Investigation sampling occurred within the interior of building 1244. No sampling is shown on plates outside in this storage area as part of the Final Draft Remedial Investigation.

Vertical tank:

Vertical tank on hillside above building 973: This area is not discussed in the EPAR or Final Draft Remedial Investigation. This tank appears on figure 2-2, Fuel Distribution System, in the Basewide Corrective Action Plan as building 971. Is this tank included in the Fuel Distribution System investigation?

DA3, Disturbed Area 3: low mounds of earthen material. No debris or other waste material noted here.

Located adjacent to Battery Dynamite near building 1397. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

Three bermed areas with wet soil or stained surfaces:

On the photos these bermed areas have a pond-like structure. The original three bermed areas occur north and adjacent to road Battery East at the north end of the boneyard (as shown on Final Draft Remedial Investigation plate). In the 1959 photo review "Three larger bermed areas are now present to the southeast (of the original three abandoned bermed areas), near a ground scarred, disturbed area". The bermed area appears to be outside of the Golden Gate Bridge Highway & Transportation District Study Area boundary. The Final Draft Remedial Investigation plate indicates no sampling in this area. Were these bermed areas used to dispose of waste wash-water from the wash racks in the boneyard paint operations facility?

OS2, open storage yard 2:

This area, near building 924, is not discussed in the EPAR or Final Draft Remedial Investigation, but sampling occurred in this area as part of the Final Draft Remedial Investigation. Did the sampling include analysis appropriate for a storage area with unknown contents?

DA2, Disturbed Area 2: light-toned mounded material, possibly mixed with debris

Adjacent to Battery Howe/Wagner and shown on Final Draft Remedial Investigation plate as "storage area". This area is not discussed in the EPAR or Final Draft Remedial Investigation. Final Draft Remedial Investigation efforts occurred within the extents of Battery Howe/Wagner. No sampling is shown in this storage area as part of the Final Draft Remedial Investigation.

**1963 photographs:**

Ground scar:

Ground scar on hillside below Nike Missile Base. This area is not discussed in the EPAR or Final Draft Remedial Investigation. It appears that no sampling has occurred in this hillside area below the Nike Missile Base. The scar resembles a water erosional feature. Could this scar be an outfall from a drainage system at the Nike Missile base?

Possible debris:

Possible debris along Howard Road. Piles of possible debris listed behind building 1752 along Howard Road and Los Lobos Creek. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

Fill area:

Small fill area is shown on hillside above building 1243. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

**1973 photographs:**

DA10, Disturbed Area 10: drums

Debris with fill area to south, contains drums in 1988 photographs. My notes are incomplete on this area. May be near El Polin Spring. Did sampling occur in this drum storage area?

DA12, Disturbed Area 12: mounded material, dark material, debris

Occurs across the road from Landfill E south of building 44. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

DA13, Disturbed Area 13: excavation, light colored material, containers

This area, behind El Polin Spring, is not discussed in the EPAR or Final Draft Remedial Investigation. Area described as "quarry area" at recent RAB Meeting. The description of "containers" does not fit with quarry activities.

Fill area, trench:

Fill Area, trenching across road north of Landfill 2. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

Stain, wet soil:

Stain and wet soil behind building 643. This stained area is not discussed in the EPAR or Final Draft Remedial Investigation. The Final Draft Remedial Investigation studies include solvent investigation of building 643. On page 5-4 the report states "No spills have been documented at this site". Samples have been recovered in the stain area. Did the sampling include analysis appropriate for a stained wet area?

OS8, Open Storage Area 8: drum and container storage, stain at westernmost pad

Drum and container storage at Battery McKinnon-Stotsenberg, building 1430. The storage area is a large area as outlined on the aerial photographs. Staining reported at the westernmost pad of the battery. Drum and container storage reported again in 1988. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

Possible tank: stain and leak

Possible tank, stain and leak reported to southeast of building 944 at the Coast Guard Station. This tank may reference the above ground tank at building 996. But the area of stain outlined on the photo is much bigger and to the south of building 996. No sampling is shown on Draft Final Remedial Investigation plates in the stain area. Quartermaster reports indicate a large 400,000 gallon oil storage tank existed near the Presidio Pier in 1910. Could this large stained area be the location of the former oil tank?

OS5, Open Storage Area 5: horizontal tank, circular objects

Horizontal tank, circular objects near building 1244. This area is not discussed in the EPAR or Final Draft Remedial Investigation.

The authors of the RI Report state that information from the EPAR was used to develop work plans for the remedial investigation. Incomplete documentation is provided in the EPAR report on the screening process used to delete individual potential contamination sources from the remedial investigation. Included in the omitted potential contamination sources are areas noted above as having drum and container storage, debris storage, small areas of land filling, disturbed areas, stained and wet ground, an incinerator, and bermed (pond-like) structures near the paint operations at the Golden Gate Bridge. All potential contamination areas identified in the Installation Assessment should have been included in the EPAR and RI Report. The remedial investigation process is designed to identify all potential areas, then investigate and define areas of hazardous substances contamination. Arbitrary variables such as size, age, number of photos detected on, do not form rationale basis for the elimination of potential contamination sources from the remedial investigation process.

**COMMENT**

The Enhanced Preliminary Assessment Report (EPAR) concentrates on current industrial use to identify significant environmental operations. The RI Report locates samples in areas of identified significant environmental operations from the EPAR report or from obvious surface features such as storm drains, stained areas, etc. I spot checked documents at the Records Center during January 1996. The spot check of building plans indicates that the Record Center information was not used to identify hazardous substances in the individual buildings. The spot check information is presented by building:

Building 1244: I chose building 1244 to spot check first because it is an older (1941) industrial building with little sampling in the RI Report. Both the EPAR and RI Report indicate that building 1244 was an A.G. printing plant with minimal significant environmental operation. Building 1244 is reported to have one underground storage tank that has not yet been removed. The 1950 "Floor Plan" indicates that building 1244 was a topo. printing plant with graining machines. The graining machines had sand traps in floor trenches. The 1945 "Motor Vehicle Repair Shop" plan indicates the building was the Coast Artillery School with a motor vehicle repair shop/classroom and a diesel engine classroom. Floor plans indicate a system of floor trenches connected to engine sumps. The shops contained diesel engines, gasoline engines, gasoline compressor, coolers, battery charging bench, metal machining tools, hydraulic truck

hoists, paint shop, and transformers. It is also logical that this facility may have contained fuel and/or waste oil tanks due to the large number of engines. The 1943 "Completion Plan" shows that the Fuel Distribution System oil line was rerouted during the construction of building 1244. The 1951 "Toxic & Inflammable Storage Room" plan shows the construction of a chemical storage room. The 1956 "Power Modifications in Generator Room" plan shows a generator room and chemical laboratory. The 1962 "Floor Repair Plan" show extensive floor cracking that was repaired during the conversion to an A.G. printing plant. This information is not discussed in the EPAR or RI Report.

Building 1243: In the same file area as the building 1244 plans are the other 1200 series building plans. The plans indicate that building 1243 has a long history as a Cold Storage Plant. The building contained large freezers and cooler rooms. The plans show machine and/or compressor rooms and evaporator drains. This building is not discussed in the EPAR or RI Report.

Building 1242: The 1961 building plan labeled "Conversion of Warehouse to Dental Lab. Facility" shows finishing rooms and a chrome cast room. This building is not discussed in the EPAR or RI Report.

Building 1241: The 1961 building plan labeled "Conversion of Whse. to AG Printing Plant" indicates this building was used as a printing plant similar to building 1244. However this building is not mentioned in the EPAR or RI Report. This building is not discussed in the EPAR or RI Report.

Building 1235: The 1942 building plan "Temporary and Permanent Bldg." shows a "Heavy Ord. Machine Shop". The 1946 plan is labeled "Coast Artillery School Printing Plant. This building is not discussed in the EPAR or RI Report.

I also checked two buildings in other areas of the Presidio to see if features shown on the building plans are identified on the RI Report figures. The spot check information is presented by building:

Building 1351: Extensive 1959 building plans are available for this building. Sheet 2 of the plan set indicates an "acid neutralizing tank" and "sand & oil trap" on the south side of the building. Sheet 7 shows hydraulic hoists, a battery room, and a large shop in the interior of the building. The 1960 "Power Supply to Maintenance Shop" plan shows the location of a three transformer pad. A 1962 plan is entitled "Nike-Hercules Accessory Power Test Bay". These features are not shown on the RI Report figures.

Building 979: Extensive 1956 building plans are available for this building. Floor plans show an equipment repair room, floor pit with drain, paint shop, hydraulic lifts, repair bays, lubrication bays. Sheet 26 shows detail of hoist cylinder, paint shop, and compressors. The 1946 "Printing Plant" plan shows a portion of the building as a "Tank House". These features are not shown on the RI Report figures.

**COMMENT**

Commercial banks generally follow the 1993 ASTM Standards on Environmental Site Assessments for Commercial Real Estate, E 1527-93. ASTM Standard 1527-93 requires identifying prior uses of the property back to 1940 using standard historical sources (sec. 7.3.2). Standard historical sources for the Presidio include aerial photograph review, Records Center documents, and Quartermaster Corps Form 117 Building Records. I spot checked the quartermaster records for Fort Winfield Scott buildings 1200 to 1649. The following is the results of spot checking:

building 1283	motor repair shop
building 1338	ordnance warehouse then paint & oil building
building 1340	ordnance warehouse
building 1357	ordnance repair shop
building 1361	shelter for gasoline pump then ordnance - oil storehouse
building 1363	ordnance storehouse
building 1395	incinerator
building 1233	paint storehouse
building 1231	blacksmith shop
building 1227	plumbing and paint shop
buildings 88 & T-140	gas stations
gasoline pumping station near Coast Guard Station	
two lists of transformers, oil pumping station	
400,000 gallon oil tank, built 1910, Fort Winfield Scott	
100, 000 gallon oil tank, moved from Presidio Wharf area to Fort Winfield Scott	

The quartermaster records contain building specific documentation of the prior industrial use of most buildings on the Presidio. The quartermaster records and building plans are the most obvious sources of historical building-specific information on the Presidio. It appears that the quartermaster records were not used in the EPAR or RI Report. The documentation at the Records Center that I spot checked is obvious and easily obtainable. By not including this information in the remedial investigation, future commercial banks, businesses, and lessees will report and investigate these potential contamination sources during commercial loan transactions. This obvious documentation on hazardous substance use should be included in the remedial investigation to prevent obstructions and possible litigation during future real estate transactions.

**COMMENT**

The remedial investigation concerns CERCLA releases of hazardous substances and is separate from the UST Program. Both programs reference the basewide 1989 Enhanced Preliminary Assessment Report (EPAR). It appears that in the UST program, the contractors used an additional phase of historical research to identify underground storage tanks at the individual buildings. The following documents are referenced in the January 1996 Final Basewide Corrective Action Plan:

March 29, 1991, James M. Montgomery, Consulting Engineers Inc., Phase 2 Preliminary Assessment, Underground Storage Tank Data Sheets, Presidio of San Francisco,

## Underground Storage Tank Location and Status Assessment

Waterways Experiment Station (WES), 1990, Phase II Preliminary Assessment, Underground Tank Location and Status Assessment, Presidio of San Francisco, Prepared for U.S. Army Corps of Engineers

Spot checking of building plans on file at the Records Center indicates that the majority of tanks shown on building plans are included in the UST program. It appears that the UST program used an additional phase of historical research involving the building plans and other documents following the basewide EPAR. This additional phase of research on individual buildings does not appear to have occurred in the remedial investigation program.

### COMMENT

Figure 2.3-10, Schematic Illustration of a Coastal Aquifer, is too generalized to be of practical value. This figure should be replaced with cross-sections of the actual boring log and ground water sampling data. Show actual salinity data on cross-sections. The definition of the zone of diffusion is critical to the ecological interpretation of the Crissy Field Area. Does potable ground water enter directly into the ocean off of Crissy Field?

### COMMENT

In general the hydrogeologic model for the Presidio upland areas is crude and undeveloped. Sec. 2-16 discusses isolated pockets of shallow ground water that do not constitute a ground water aquifer. The discussion appears to only consider the dry season scenario. The majority of ground water flow occurs during the wet weather months. Very little surface runoff is observed in the upland areas of the Presidio during the wet weather months indicating ground water recharge through the surficial deposits. The discussion should discuss the seasonal variation in ground water flow and the major influence of seasonal rainfall on the hydrogeologic model. There is little discussion of ground water recharge from the upland areas to the ground water basins. How and where does this ground water recharge occur?

### COMMENT

The results of wipe sampling collected at buildings in the remedial investigation is not adequately discussed in the individual sections. Many of the wipe samples show results above detection limits, especially for lead. What is the purpose of the wipe sampling if the results are not used to determine the presence of contamination? The RI Report states that the results of wipe sampling are not considered reliable. Further explanation as to why the samples are unreliable is needed. Why were the samples collected if they are unreliable? The data is already collected and the analyses finished. The results should be professionally evaluated to determine the presence of contamination. For example building 1450 contains a system of floor trenches. The trenches were only sampled with wipe samples. No soil samples were collected from the trenches. Did the wipe samples indicate contamination of the trenches? If the wipe sampling is unreliable then when will sampling of the floor trenches be performed?

### COMMENT

The RI Report shows the extent of ground water basins on figure 2.3-3. This map should show

the locations of springs and seeps. A tabulation of spring and seep sampling results would help illustrate the impact of contamination sites upon the ground water. Springs have been reported in the RI Report at El Polin Spring, Los Lobos Creek, Mountain Lake, and seeps at Baker Beach. NPS personnel report a spring below tank 1349 in the “Valley of Serpentine”. The RI report for the Public Health Services Hospitals reports a spring behind the hospital. Are these all of the springs and seeps in the Presidio. Have all of the springs and seeps been sampled and tested. Have the seasonal springs and seeps only present during the wet weather season been identified and sampled?

**COMMENT**

Building plans of the Nike Missile Base at the Records Center show the location of a fuel tank adjacent to the fuel pad at building 1451. The figures in the RI Report show no sampling at the tank location. The January 1996 Basewide Corrective Action Plan does not appear to list a tank at building 1451. Please explain why this tank location was not sampled.

**COMMENT**

What is the source of “high TDS contamination” of the groundwater at the Nike Missile Base. Sec. 2.3.6.1, states that ground water from the Nike Missile Base has the potential to flow to Landfill 8, Los Lobos Creek, the potable well field, and Mountain Lake. Do up-gradient wells at the Landfill 8 study area show contamination? Does the down-gradient spring at the Public Health Service Hospital show contamination?

**COMMENT**

Sec. 10.7.5.2 states that nitrate contamination of the ground water at Mountain Lake is not considered to be of concern because the contamination is shallow and only in one sample. This statement is speculative since only one other shallow ground water sample (MLSB02) is shown on figure 10.6-3, over 300 feet away. This data suggests nitrate (fertilizer) contamination from the golf course is impacting the Mountain Lake ground water at significant concentrations. The nitrate contamination from the golf course would be expected to be in the shallow ground water since it likely originates from the surface application of fertilizer. Sampling of Mountain Lake indicates TPH contamination of the surface water. The RI Report indicates the contamination is likely seasonal and originates from storm runoff off Highway 1. It is logical to sample the surface water on a seasonal basis to determine the maximum concentration of TPH, oil & grease, and lead contamination.

**COMMENT**

The Enhanced Preliminary Assessment Report states on page 90 that chromium and lead contained in paints and protective coatings are normally encountered wastes at a Nike Missile Base launcher area. The chrome or lead contamination at the launcher area could be related to on-site use and not natural background in soil. A logical testing method to distinguish between natural inorganic levels and man-made inorganic contamination is needed.

**COMMENT**

Table 4.4-3 shows that arsenic results exceed ambient levels. Table 3.7-8&9 do not show arsenic as exceeding ambient levels. Text does not list arsenic as exceeding ambient levels.

**COMMENT**

Table 2-1 of the January 1996, Final Basewide Corrective Action Plan lists tanks 283.2 and 283.3, compressor-waste oil tanks as under the CERCLA program. These tanks are mentioned on page 7-3 of the RI Report. It does not appear that these tanks were investigated in the RI Report. No samples appear in the interior of building 283 on the RI Report figures. If building 283 was a motor vehicle maintenance facility, why are the interior environmental operations such as the hydraulic hoists, grease pits, etc. not shown on the figures. Was building specific historical research performed on building 283 to identify these features.

**COMMENT**

Sec. 8.2.1.3 states that soil contamination is present beneath the three dry cleaning solvent tanks at building 228. Table 2-1 of the Final Basewide Corrective Action Plan verifies that soil contamination was encountered beneath all of these tanks. Sec. 8.2.2 states that two hand-augered borings investigated the north side of an interior room next to an air scrubber unit and a cutoff drain pipe. No sampling is shown at the location of the dry cleaning solvent tanks. What are the results of tank removal at the dry cleaning solvent tanks? Was the soil contamination removed from beneath the solvent tanks at building 228? The RI Report indicates the dry cleaning solvent tanks are a source of ground water contamination. Tank removal sampling results, soil remediation results, and chemical distribution maps are required to evaluate the contamination at building 228.

The chromatogram of tank content sample 228TK02 was compared to “Jet A Fuel” reference sample. Why wasn’t the sample compared to a more logical Stoddard Solvent reference sample? Where are the results of tank content sample 228FP02? Why wasn’t the contents of tank #7 sampled? Table 2-1 of the January 1996 Final Basewide Corrective Action Plan indicates the three dry-cleaning solvent tanks at building 228 are part of the CERCLA program. However sec. 8.2.6 of the RI Report states that the contamination is fuel hydrocarbon and these tanks are being transferred to the UST program. What program are these tanks in?

**COMMENT**

The January 1996 Basewide Corrective Action Plan indicates the waste oil tank at building 231 is in the CERCLA program. The discussion of building 231 does not provide details on the waste oil tank removal and sampling. What is the status of the waste oil tank? The building 231 discussion should be separated into separate investigations concerning the fuel tanks, waste oil tanks, and dry-cleaning solvent tanks. The present discussion is confusing and does not allow evaluation of the CERCLA releases at the building 228 solvent and building 231 waste oil tanks.

**COMMENT**

The RI Report states that only one of three wells at Landfill 4 contained seasonal water. Sampling should be performed on a seasonal basis, when seasonal water is present. The hydrogeologic model for this site and other upland areas of the Presidio is incomplete. Is this area a recharge area for the down-gradient ground water basin? Is their significant ground water and ground water flow in this area during the seasonal wet period?



**COMMENT**

Was the former fuel distribution system trench that passes beneath Landfill 5 sampled for total petroleum hydrocarbons? Will this area be sampled as part of the FDS program.

Sincerely,

Mark Youngkin, Community Member  
Restoration Advisory Board, Presidio of San Francisco

cc: Robert Reinhard, RAB Co-Chair  
Roberta Blank, National Park Service  
Romy Fuentes, DTSC  
Martha Walthers, DPH  
Michael Work, EPA

Comment letter example #3

June 13, 1996, comment letter by RAB community member  
Mark Youngkin to Army on the Draft Final Remedial Investigation  
Report, Building 609, Commissary Investigation



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MARK YOUNGKIN  
Engineering Geologist  
Environmental Consulting

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June 13, 1996

David Wilkins  
BRAC Environmental Coordinator  
Department of the Army  
Headquarters, I Corps and Fort Lewis  
BRAC Environmental Office (PSF)  
604 Murray Circle, East Fort Baker, Sausalito, CA 94965

Re: Comments on Draft Final Remedial Investigation (RI) Report,  
Building 609, Commissary Investigation, Presidio of San Francisco

Dear Mr. Wilkins,

I reviewed documents at the Army Records Center for additional information on the commissary building 609. As reported in my May 2, 1996 comment letter, the environmental history of building 609 may be in error in the Draft Final Remedial Investigation (RI) Report. Additional new information verifies that the RI report is in error. The following information pertains to the commissary building 609:

1. I reviewed the document "Final Environmental Assessment, Proposed Commissary Relocation, Presidio of San Francisco, California" dated January 1987, by the US Army Corp of Engineers, Sacramento District, report number C-1073. Page 7 of this report states that the proposed project would replace existing four building commissary facility built in 1917 and 1941 consisting of buildings 251, 252, 1186, and 1187. The existing commissary facility was located in the DEH area. Page 16 states that the proposed new site has been cleared except for building 653, a refrigeration warehouse which will be included in the new commissary and building 609, the "Four Seasons" store, a branch of the Post Exchange (PX) which will be demolished. Previous facility structures on the proposed site were demolished and removed between 1982 and 1985. Prior to the demolition of these other structures, the site was used for motor pool parking, garages, and shops and warehouses. The Final Environmental Assessment does not discuss hazardous materials, hazardous waste, environmental investigation or remediation.
2. Demolition files exist for buildings in the motor pool complex that the new commissary replaced. Only the demolition file for building 626 contains soil sampling results dated May 29, 1987. The soil sampling results indicate an unauthorized discharge of petroleum hydrocarbons occurred at building 626, a former gasoline service station. The laboratory

analysis results indicate total fuel hydrocarbons up to 5900 mg/kg in subsurface soil.

3. The demolition file for building 626 also contains a memorandum dated May 26, 1987. This memorandum indicates a 15,000 gallon gasoline AST tank and waste oil storage tank existed at building 626. The memorandum refers to the removal of the waste oil tank and additional maps showing the extent of soil contamination. The demolition file does not contain this additional information.
4. The files also contain a report of an aboriginal skeleton and bird whistle encountered while digging a pit for a new hydraulic hoist in building 628 of the Motor Pool Compound. The skeleton was found at a depth of 250 cm below grade in native mud and clay. This report indicates vehicle repair activity in building 628.

Please contact me if you have questions concerning this new information.

Sincerely,

Mark Youngkin  
Community Member,  
Restoration Advisory Board (RAB), Presidio of San Francisco

cc: Jan Baxter, Presidio RAB Co-Chair (via fax)  
Presidio RAB community members (via fax)  
Roberta Blank & Brian Ullensvang, National Park Service (via fax)  
Romy Fuentes, DTSC (via fax)  
Richard Hiatt, RWQCB (via fax)  
Martha Walters, City of San Francisco (via fax)  
Michael Work, U.S. EPA (via fax)  
Paul Townsend, U.S. Army Corps of Engineers (via e-mail)  
Bruce Handel, U.S. Army Corps of Engineers (via e-mail)  
Roger Henderson, U.S. Army Corps of Engineers (via e-mail)

Attachment:

1. Brown and Caldwell Laboratories May 29, 1987 Analytical Report Log numbers E87-05-311, E87-06-051, and E87-05-638
2. Memorandum for Commander, U.S. Army Engineer District, Sacramento, dated May 26, 1987, subject: Construction of New Commissary

Comment example #4

November 1996

Building Cross-Reference Table submitted by RAB community member Mark Youngkin to Army and regulatory agencies

Note: The Historical Environmental Document Survey cited on the first page of the table is archived in a separate file on the RAB Documents page.

**BUILDING CROSS-REFERENCE TABLE**  
Based on Historical Documents at the Army Records Center  
Community Environmental Response Facilitation Act (CERFA)  
Presidio of San Francisco, Army Records Center, National Park Service

Prepared by: Mark Youngkin, Community Member, Restoration Advisory Board, Presidio of San Francisco  
Prepared for: Base Environmental Coordinator David Wilkins, BRAC Environmental Office, Department of the Army  
Date of Report: November, 1996

**EXPLANATION OF TABLE**

The preliminary Building Cross-Reference Table contains data collected from historical documents on file at the Army Records Center at the Presidio of San Francisco. A previously submitted database report called Historical Environmental Document Survey contains records of documents preserved at the Army Records Center. This document identifies buildings having evidence of significant environmental operations in the Army Records Center documents. I compared the building numbers with significant environmental reports on file at the Army Document Depository at Fort Baker. If the document contains a reference to the buildings environmental operation then a X is shown in the column beneath that report. The last column shows the CERFA parcel designation for that building. Sites with suspected environmental operations that do not appear in the investigation programs could possibly have an incomplete CERFA designation. Many of the incomplete designations appear to be caused by demolished buildings. This document is subject to revision as new information becomes available.

Building Number	Date	Site Description and Environmental Operation	1 Basic Info. Maps	2 Quarter Master Form	3 Building Plans Historic	4 Installation Assessment Army 1983	5 Historic Survey 1985	6 Installation Assessment EPA 1990	7 Enhanced Prel.Ass 1989	8 Final Prel. Ass 1992	9 Data Gaps Report NPS 1994	10 General Mangmnt Plan 1994	11 Remed. Invest. 1995	12 Corrective ActionPlan 1996	13 CERFA Parcels 1994
2,35,99	1978	Blowdown tanks, boiler			X										
T4-T16	1958	Electric transformers			X										
T-7	?	Electric shop, solvent tank			X										
M30	1939	Gas station, 3 UST's, grease rack, motor repair in adjacent building M22 & M26	X												½ P, ½D
31	1972	Generator building, UST, transformer, Bldg 35 area (?)			X										D
38	1963	Generator shed, UST			X									X	D ?
67	1957	Telephone exchange building battery room	X		X		X					X			Q
68	1981	Standby generator, UST	X		X									X	D
70	1983	Substation, transformer, now parking lot	X		X										P
95		Ammunition Magazine					X								
107	1968	Substation, transformer, switching station	X		X							X			Q

Limitations apply to the use of this document. Read the Statement of Limitations at the end of the table. List of references at end of table.

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122	1973	Multi Crafts Shop, acid waste line, chemical room, dark room,	X		X		X					X			Q
203	1940	Blacksmith shop, machine shop, demolished at 101	X	X											Q
205	1940	Pump house, lift station 2	X	X					X				X		Q
old 207		Powder house for saluting gun, demolished (?)		X											D
old 231	1937, 1946	Water shed (208), artesian well, now under service station (?)	X												D
208	1938	Paint & oil shed, vehicle washing	X	X							X		X		D
215-217	1940	Post Exchange Gasoline Station, hoists, compressor, floor drain, paint room, grease rack, 4 UST	X	X					X				X		D
221	1942	Ordnance store house	X	X											Q
225	1941	Paint warehouse	X	X								X			D
252	1971	former commissary building , UST, generator, cold rooms, compressors, near DEH area	X		X										D
267,662, 619, 926, 979	1972	Oil interceptor installation			X										
267	1939, 1962	Q.M. Maintenance, steam cleaning plant, wash racks, oil interceptors	X	X	X				X				X		D
DEH area		Above-ground storage tanks						X	X						D
T-304	1940, 1970	Oil tank, 30'x20', 106,029 gallons, detail plan on sheet 7 of Detail Liquid Fuel Maps, may be tank 213 moved from near Presidio Wharf in 1910	X	X					X					FDS	P
312		Radio Receiving Station					X								
314	1986	Station upgrade, generator, transformer, radio transmitter	X		X		X					X			D
534	1974	Fuel depot on Sherman Road in residential housing area	X												D
560	1946	Photo shop, dark room		X											
600 area	1945	Existing gasoline lines, Presidio Motor Pool	x		X										D
600 area	1984	Demolition of motor pool	X		X										D

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		buildings 617, 619, 623, 624, 625, 620, 627, 628													
601	1939	Gas station 601, 2-10K gallon tanks, removed prior to 1946, Presidio Gasoline Station 253	X	X					X						D
611	1940's	Transformer House, location now at main PX parking lot	X	X											D
613	1922, 1943	paint shop, motor transport school, motor repair shop, at new commissary parking lot	X	X	X										D
614	1940's	Chemical cart house, now at new commissary parking lot	X	X											P
616	1941	Gasoline station, paint storage in 1946, AST, dispenser, underground piping, now at new commissary parking lot	X	X					X					X not existing	P
618	1944	Third motor body shop, brake lining machines, destroyed by fire in 1944, location now at new commissary parking lot	X	X											D
621	1945	Gasoline storage tank, 15,000 gallon AST, moved to Ft. Scott in 1945, location now at new commissary parking lot	X	X	X				X						D
622	1932	Gasoline pump house for Lower Post Gas Station, near tank 621, now at commissary parking lot	X	X	X									X not existing	D
624, 629	1934	Gas pump house, oil storage, UST, one pump, location now at new commissary parking lot	X	X	X				X						D
626	1941	Gasoline tank, 15,000 gallon UST, connected to tank 621, one pump, location now at new commissary parking lot	X	X	X				X					X not existing	D
628	1942	Motor repair shop, machine shop, paint shop, grease rack, hoists, battery room, gasoline meter, location now at new commissary parking lot	X	X	X										D
635	1939	Machine gun range	X	X											D



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639	1969	generator building	X		X										Q
640	1951	Ordnance maintenance shop, paint booth, machine shop, oil storage shed, blacksmith shop,		X	X				X				X		D
642	1963	Wash platform, grease rack, generator pad	X		X						X		X		Q
644	1946	Heavy equipment shed, unit motor pool	X	X							X				D
653	1965	Refrigerated warehouse, compressors, oil traps, location now at commissary parking lot	X								X				Q
660	1941, 1948	Metal salvage center, former printing plant, blacksmith shop, demolished, across road from building 661	X	X	X										D
661	1952	Firing range, printing plant	X		X		X						X		D
664	1932, 1971	Pump house for dipping vat, multiple crafts shop, demolished, across from 667	X	X	X										D
665, 666	1932	Horse dipping tank, mixing tank, draining pens, demolished, across from 667	X	X	X										D
667	1985	automotive repair room, body shop, battery room	X		X		X					X			D
670	1921	chemical store house	Thompson, Erwin, September 1995, Defender of the Gate, The Presidio of San Francisco, Historic Resources Study, 100% Draft												
671	1940	Oil house	X	X											Q
678	1939	Skeet Range at Crissy Field	X									X			D
680	1980	Transformer storage area	X		X		X		X			X	X		D
681	1942	“Chemical Warfare” building		X								X			Q
800 area	1980	Debris transfer station, location not shown			X										
806	1939	Nursery yard, demolished, between MacArthur & Barnard	X	X											P
807, 808	1942	Greenhouse	X	X											P
904, 909	1956	Photographic dark rooms, currently under demolition	X		X							X			D
920		Motor repair shop, parachute rigging shop	X				X		X motor						
921	1938	Chemical truck house,	X	X											D

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		demolished near building 920													
923	1940	Transformer house	X	X								X	X		Q
925	1940	Wash rack		X									X		
926-927 area	1940	Gasoline station & storage tanks, Gas Station (Crissy Field), map shows as old 965 station between Coast Guard Station and building 926, also shown under building 1260 in QM 170 forms (?)	X	X			X		X			X	X		D
927	1939	Transformer building	X	X					X				X		D
928	1939	Gasoline Pump House	X	X											D
929	1942	Gasoline pump house, oil storage, tanks removed 1942	X	X					X			X	X		D
933		Maintenance shop w/ dope					X		X						
934	1955	Motor repair shop	X		X		X		X			X	X	X	D
938	1949	Paint & repair shop, wash rack	X		X										D
946	1940	Transformer house	X	X								X			Q
950	1939	Photo lab, storage shed		X					X			X			D
965	1940	Photo lab - chemical truck house		X					X						D
966	1941	Photo lab, radio receiving station	X	X			X					X			D
971A	1941	Fuel Oil Storage Tank		X								X			D
967	1941	Oil pumping station	X	X								X			D
979	1956	Set of floor plans showing location of facilities	X		X						X				D
971	1910	Plan for oil storage tank & pipe, shows 1356 tank and tank at Lobos Creek	X		X										D
975	1980	Military gasoline service station	X		X				X						D
981	1940	Paint shop, oil storage		X											D
985, 986		Mine loading houses					X								
989		Plumbing shop					X								
1000		Lots of plans on Letterman Hospital			X										
1040, 1088	1941	Power house at Letterman Hospital, fuel oil tank	X		X		X		X			X			D
1047	1944	Dry cleaning plant			X				X						D
1167, 1170	1937	Incinerators	X												D,Q
1219	1950	Printing plant, chemical lab	X		X							X			½D-½Q
1221	1946	Post Exchange gasoline station	X		X							X			D

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1227	1962	FUIF Maintenance Shop, paint shop	X	X	X		X				X	X			D
1229	1917	Motor truck garage, shows maintenance pit in floor, next to building 1230	X		X										D
1231	1943	Blacksmith shop, storage, electric motor repair	X	X			X					X			Q
1233	1940	Paint storehouse, motor repair	X	X								X			Q
1235	1946	Printing plant, heavy ordnance machine shop			X										Q
1239	1928	Oil station or storage	X									X			Q
1241	1961	Printing plant, dark room	X		X							X			Q
1242	1961	Dental lab, chrome casting room	X		X							X			Q
1242, 1243	1944	Refrigeration & cold rooms, compressors, machinery rooms	X		X							X			Q
1244	1962	Motor repair shop, diesel school, chemical room, printing plant	X		X				X		X		X		D
1260	1974	15,000 gallon fuel oil tank	X	X					X						D
1264	1974, 1977	10,000 gallon fuel oil tank, dike around tanks, near bldg 1244	X		X				X						D
1283	1941	Motor repair shop, demolished, near Battery Howe/Wagner	X	X											D
1286	1969	Arms room, demolished, near Battery Howe/Wagner			X										D
1300 area	1954	Dump zone Area 1300, near Battery Godfrey, metal salvage			X										
1329	1941	Post greenhouse, demolished, behind building 1325	X	X											Q
1338	1941	Ordnance warehouse, paint & oil building, flammable shed	X	X			X				X	X			Q
1339		Ordnance Repair Shop					X								
1340	1941	Ordnance warehouse	X	X			X				X	X			Q
1351	1959, 1978	Motor repair shop, set of 17 sheets with floor plan details	X		X				X		X		X	X	D
1354	1915	Battery Saffold, shows oil room, power room, possible fuel tanks			X						X	X			Q
1355	1983	Ordnance shop, automotive exhaust system, grease pit	X	X	X						X	X			Q
1356	1974	20,000 gallon fuel oil tank,	X						X						D

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		abandoned, at Battery Dynamite Power Station													
1357	1944	Ordnance repair shop	X	X	X						X				D
1361	1941	Gasoline pump, oil & ordnance storehouse	X	X							X				Q
1363	1920	Ordnance machine shop	X	X	X						X	X			Q
1369	1957	Indoor pistol range	X	X	X							X	X		D
1395	1942	Incinerator, behind building 1658, Battery Marcus Miller, near Disturbed Area 1	X	X											Q
1450	1941	Transmitter building, oil switches, generator room	X		X				X			X	X		D
1451, Nike	1960's	Fuel tank, generator room	X		X				X			X	X		D
1600 area	1961	Post Skeet Range, near Battery Godfried, not verified			X										
1601	1943	Combined Mine Casemate, diesel tanks in power room	X		X										
1648	1953	Wash platform	X		X										D
1750, 1752	1962	USAR center, 45 sheets, details of maintenance shop	X		X				X		X		X		D
1781, 356	no date	Alum treatment plant, aluminum, metals	X	X								listed as family housing			
Transformers	1940's	Q.M. Form 170 books contain lists of transformer locations, Building plans show transformers also		X	X										
Battery Dynamite	1978	Map shows chemical storage in Battery Dynamite, Map of Danger Areas	X		X										D
Artesian Well	early 1900's	Fort Scott quartermaster mule stable, 100 gallons per hour	X												
Liquid Fuel Distribut. System	1921, 1940's	Maps shows underground fuel piping from 921 to 937, then to remote stations at buildings 926, 929, 930, 934	X	X	X										D
Coast	old	Topo Map and Location Map of	X					X							D

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Guard Station		Fort Point Coast Guard Station, shows 2 oil UST's and one gas pump near wharf, grease rack													
Lobos Creek	1921	Balloon Field Plan, shows generator house near creek, near EPA debris pile			X			X							P
Lobos Creek Pump Station	1910	Plan For Oil Storage Tank, shows oil storage tank at pump station	X												D
Lobos Creek Rifle Range	1907, 1921	600 yard and 1000 yard rifle range along Lobos Creek, Target butts shown on plan of Balloon Field, butts verified by field observation	X												P
Bedrock Aquifer	1870	Maps shows springs, water shafts, flow rates up to 8 gal/min., spring at Mtn Lake, water reservoirs, pipeline at El Polin Springs area	X												
DA5	1946	Disturbed Area 5, mound, debris, stain						X							
OS6	1946	Open storage area 6						X							
DA6	1959	Disturbed area 6, incinerator, stain-wet soil areas						X	X				X		D
OS1	1946	Open storage area 1, drum storage						X							
OS3	1959	Open storage area 3, debris waste						X							
OS5	1959	Open Storage Area 5, waste storage						X							
DA3	1959	Disturbed Area 3, low mounds of earthen material						X							
Bermed Areas	1959	Three bermed areas with wet soil or stained surfaces, Bridge area						X							P
OS2	1959	Open storage yard 2						X							
DA2	1959	Disturbed area 2, light-toned mounded material, possibly mixed with debris						X							
Ground Scar	1963	Ground scar on hillside below Nike Missile Base						X							D

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Possible Debris	1963	Piles of possible debris alongside Howard Road and Lobos Creek						X							P
Fill Area	1963	Small fill area on hillside above building 1243						X							Q
DA10	1973, 1988	Disturbed area 10, drums						X							
DA12	1973	Disturbed area 12, mounded material, dark material, debris						X							
DA13	1973	Disturbed area 13, excavation, light colored material, containers						X							
Fill area, trench	1973	Fill area, trench across road north of landfill 2						X							P
Stain, wet soil	1973	Stain and wet soil behind building 643						X							D
OS8	1973	Open storage area 8, drum and container storage, stain at westernmost pads of battery, near residential playground, Battery McKinnon-Stotsenberg						X							Q
Possible tank, stain, leak	1973	Possible tank, stain and leak reported to southeast of building 944 at the Coast Guard Station						X							D
OS5	1973	Open storage area 5, horizontal tank, circular objects						X							

## STATEMENT OF LIMITATIONS

This document presents a preliminary compilation of historical environmental records preserved at the Army Records Center, Presidio of San Francisco. The National Park Service maintains the center. This document is intended to be a working draft that will be completed as more data becomes available. This table is intended to be used in conjunction with the Historical Environmental Document Survey of the Army Records Center, Presidio of San Francisco submitted during June 1996. The author compiled this data on a volunteer basis as a service to the community. The data in this document is preliminary and subject to verification. Time constraints did not allow comprehensive verification of the table to be performed. I did not include many historical non-CERCLA documents on asbestos removal, pcb removal, transformers, underground tank removal, or the Letterman Hospital and Public Health Service Hospital complexes in this document. Army personnel indicate that some of the plans listed here may have been proposed but not constructed. Crosschecking of data from different sources is recommended. For example, the basic information maps and quartermaster forms display as-built conditions. These documents can be used to crosscheck the table. This advisory document is delivered to the Army for environmental cleanup purposes. No warranties are expressed or implied.

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*Building Cross-Reference Table, Army Records Center, Presidio of San Francisco, 1996*

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## REFERENCES

1. Historical Basic Information Maps, Presidio of San Francisco, Army Records Center, maintained by National Park Service
2. Historical Quartermaster Corp Form 170 Books, Presidio of San Francisco, Army Records Center, maintained by National Park Service
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Comment letter example #5

April 9, 1997, advisory report by three RAB community members to Army on Battery Caulfield Nike Missile Site



Mark Youngkin  
PO Box 640324  
San Francisco, California 94164

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April 9, 1997

Mr. David Wilkins  
Base Environmental Coordinator  
BRAC Environmental Office, Presidio of San Francisco  
604 Murray Circle, East Fort Baker, Sausalito, California 94965

Subject:       Advisory Report on Battery Caulfield, Nike Missile Site  
                  Presidio of San Francisco

Dear Mr. Wilkins,

Presidio Restoration Advisory Board (RAB) community members Mark Youngkin, Julia Cheever and Doug Kern inspected the restored Fort Barry Nike Missile Site (Marin Headlands) on March 20-21, 1997. We interviewed retired Army Col. Milton B. Halsey Jr., the site manager, on the similarities between the Fort Barry site and the Presidio Nike Missile Site, Battery Caulfield. The Fort Barry facility is the only restored Nike missile site in the nation.

Mr. Halsey told us that the correct name for the concrete underground missile storage structure is magazine, rather than silo, because the missiles were surface fired from outside the magazine. The Presidio site had three magazines. Two were Nike Type C, with a main room measuring 42' by 63' by 10' high, and the third was Nike Type B, measuring 49' by 60' by 10' high. Fort Barry had two Type B magazines. The two types of magazines are very similar in construction, however.

Mr. Halsey entered the westernmost Presidio Magazine 3 and looked into the other two magazines about a year and a half ago. He said the Presidio magazines are similar to the restored Fort Barry magazine. He would like to recover the hydraulic equipment (pumps, motors, valves, etc.) from the Presidio magazines for use as replacement parts at Fort Barry. Mr. Halsey said all of the hydraulic equipment appears to remain in place at the Presidio magazines. He said the hydraulic oil tank and related piping hold 271 gallons of hydraulic oil and that such tanks were not emptied upon the deactivation of Fort Barry and several other Nike sites with which he is familiar.

The magazines at Fort Barry had collected groundwater before restoration by the National Park Service. Mr. Halsey reports that when the Fort Barry sump pump (located in the elevator pit at 25 feet below surface grade) is turned off, groundwater fills the elevator pit, regardless of the season. He states that the same situation likely occurs at the Presidio (due to a similar hillside setting). Even though the Fort Barry elevator doors were highly corroded with large holes, Mr. Halsey did not observe significant water entering the magazines through the doorways. Inspection of the elevator doors at the Presidio indicates raised berms and surface drains surrounding the doorways, similar to the Fort Barry site.

Our inspection of the restored magazine at Fort Barry indicates mainly one room with the open elevator shaft running the entire width of the room. The only detached room is a small fireproof personnel shelter used to protect the crew during surface firing. Mr. Halsey said the shelter contained 384 square feet of .5-inch thick asbestos covering. The asbestos was removed in the restoration of the Fort Barry magazine.

The most conspicuous feature of the magazine is the elevator shaft. At the bottom of the shaft is a pit, 6.5 feet deep, with a sump pump and drainpipe out to the surface. All three steel elevators are likely still present in the Presidio magazine pits. An opening allows access below the elevator in each pit. The elevator piston continues down another 18.5 feet below the floor of the elevator pit in a steel tube. A small amount of hydraulic oil is present in this piston tube. Our inspection indicates that the ground-level elevator opening is large enough (41 to 52' long by 9' wide) to allow filling of the majority of the magazine with sand.

According to Army blueprints we examined at the GGNRA Park Archives and Records Center, the concrete roofs of the Presidio magazines are buried six feet deep. The volume of the Type B magazine, as calculated from these blueprints, is about 1,480 cubic yards. The volume of the Type C magazine is about 1,340 cubic yards. The combined volume of all three magazines at the Presidio is estimated at about 4,160 cubic yards.

Mr. Halsey said the Fort Barry magazines were painted with lead-based paint. The paint was removed with sandblasting, which produced a total of 6 tons of contaminated paint and sand waste per magazine. The elevator-launcher was painted with zinc-based fire-resistant paint.

All three Presidio magazines were observed to contain significant water during March 1997. We calculate the volume of water in all three magazines at about 319,000 gallons (March 1997). In contrast, based on observations by Mr. Halsey during 1995, the magazines contained about 133,000 gallons of water. Apparently, almost two-thirds of the magazine water may drain slowly into the surrounding groundwater each summer. In the northernmost Presidio Magazine 1, the hydraulic oil tank is submerged by water, creating the potential for contamination by hydraulic oil.

We discussed the future of the magazines at the Presidio site with Mr. Halsey. In Mr. Halsey's opinion: 1) The Presidio magazines have been abandoned for more than 30 years. The deteriorated condition of the magazines and equipment make it unlikely that restoration of the facility could be achieved. 2) There is no need for another restored missile site so close to the Fort Barry site. 3) In his opinion there is no other good reuse of the facility owing to the excessive cost of rehabilitating the deteriorated structures. 4) Reuse of the magazines may require the removal of the lead-based paint, asbestos, hydraulic oil and equipment, and contaminated groundwater.

The RAB Technical Review Committee has been studying and discussing the Presidio site. Committee members have focused on the following concerns:

- 1) The deteriorating magazine interiors (asbestos and lead based paint), standing water, potential low oxygen conditions, and rusted doors of the magazines could be a safety hazard to people, particularly children, who gain entry to the site now or in future years.

- 2) The magazine water appears to originate mainly from groundwater that seasonally rises within the magazines. The water becomes contaminated with antimony inside the magazines. The magazines contain hydraulic oil tanks and lines that could potentially contaminate the water. The contaminated water in the magazines appears to drain slowly out of the magazines each summer as local groundwater falls due to seasonal fluctuation.

If the Army does not close the underground magazines now, then the hazardous conditions could remain for an indefinite time, delaying the planned open space reuse of the site. The following are possible recommendations now under consideration by the Technical Review Committee for future submission to the Army:

1. Remove contaminated water from the magazines during the summer. Concurrently, remove the metal elevator doors and elevators and recycle as scrap metal.
2. Drain and remove hydraulic oil tanks (as has been done at other locations in the Presidio) to prevent future contamination. Allow Mr. Halsey to salvage hydraulic equipment for use at the restored Fort Barry Nike Missile Site.
3. Perform magazine closure by filling the magazines with sand and capping the openings with compacted backfill or concrete. Alternatively, consider collapsing the roofs of the magazines. Then, backfill the magazines with discharge soil from the LTDD unit.

Please consider this information in your deliberations on this site. We have copies of the facility plans and sections available for inspection. For a guided tour of the restored Fort Barry Nike Missile Site, contact site manager Bud Halsey at 415.331.1543.

Sincerely,

Mark Youngkin  
Julia Cheever  
Doug Kern

Community Members, Restoration Advisory Board  
Presidio of San Francisco

cc: RAB Community Members  
Brian Ullensvang and Roberta Blank, NPS  
Michael Work, EPA  
Romy Fuentes, DTSC  
Richard Hiett, RWQCB  
Martha Walters, City of San Francisco  
Roger Henderson, COE

Comment letter example #6

May 20, 1998, group comment letter by RAB community members to DTSC and Army presenting list of deficiencies and proposals related to the Final Feasibility Study Report

COMMENT SUBMITTED FOR PUBLIC RECORD

RAB Community Members  
c/o Mark Youngkin  
PO Box 640324  
San Francisco, CA 94164

May 20, 1998

Mr. Romy Fuentes  
Dept. of Toxic Substances Control (DTSC)  
700 Heinz Avenue, # 200  
Berkeley, CA 94710-2737

Mr. David Wilkins, BRAC Environmental Coordinator  
Department of the Army, Headquarters, I Corps and Fort Lewis,  
BRAC Environmental Office, 604 Murray Circle,  
East Fort Baker, Sausalito, CA 94965

Dear Mr. Fuentes and Mr. Wilkins,

We, the undersigned 15 community members of the Presidio Restoration Advisory Board, submit the following list of deficiencies and proposals related to the Final Feasibility Study Report (May 1997) for the Main Installation of the Presidio, and to the future preparation of a Remedial Action Plan for this part of the Presidio. Community members take this task of commenting on the remediation planning process for the Main Installation very seriously. RAB community members are concerned about the long-term effect of contamination on human health and the environment at the Presidio. We believe that the Army and its contractors have a number of areas for improvement in their cleanup program. Our goal is to deliver a national park that has contamination remedied to a level consistent with the best and most flexible reuse scenarios possible.

The following list represents the concerns of the community members:

## Feasibility Study Deficiency and Proposal List

Main Installation Sites, Presidio of San Francisco

Compiled by community members of the Presidio Restoration Advisory Board

May 1998

### I. Southeastern Area of the Presidio

#### Fill Site 1

*Army proposal:* Institutional controls and groundwater monitoring.

*Community comments:* Fill Site 1, which covers a tributary of the Tennessee Hollow watershed, is immediately adjacent to residential housing on the northeast and the popular Julius Kahn Playground on the south. A residential structure is located within the boundaries of Fill Site 1, making the site in effect the backyard for this residential land use. Children from the Julius Kahn Playground are commonly observed playing on the fill surface. Fill material is exposed at the face of the landfill. While the Feasibility Study portrays this disposal site as containing only harmless construction debris, the study's cost estimate for removal of the landfill indicates 14,652 cubic yards of highly contaminated material at this site. The Feasibility Study does not adequately address the sensitive residential and playground land use at this site.

Water flowing from a seasonal spring in the landfill flows down-slope to El Polin Spring picnic area and ultimately to the future restored wetland at Crissy Field. This surface water was not sampled in the Remedial Investigation (final report, January 1997), although children at the El Polin Spring picnic area are commonly observed playing in the surface water. This omission represents a serious data gap in the Feasibility Study. The history of the dump at this site is poorly researched in the documents. The authors fail to discuss adequately that the fill material was placed over a large former Army water supply reservoir dating from the 19th century, which could have a significant effect on the hydrology of the site.

We believe that the sampling of soil at many of the Presidio landfills, including Fill Site 1, was inadequate under the standards of accepted statistical methods and does not allow for confidence in the assessments of human health and ecological risk from soil contamination. Adequate sampling is especially important at landfills because the heterogeneous nature of fill material creates the possibility that significant contamination hot spots may not be identified. At Fill Site 1, it is disturbing to note that the Human Health Risk Assessment was based on the results of only a single composite soil sample for the entire 2.5-acre site. Because of the lack of sampling data, the results do not meet statistical standards for validity.

Despite the limited sampling, the Human Health Risk Assessment for Landfill 1 nevertheless shows substantial risk from the carcinogenic and non-carcinogenic ratio sums. These values for carcinogenic and non-carcinogenic substances are calculated by a three-step process. First, the maximum detected value for each contaminant at an individual site is determined.

Second, the maximum detected value is divided by the U.S. Environmental Protection Agency Region IX Preliminary Remediation Goal (PRG), producing a ratio. Finally, the sum of the ratios for all carcinogenic contaminants at a site equals the carcinogenic ratio sum. The process is similar for the non-carcinogenic contaminants. (See Attachments 1 and 2.)

These ratio sums were to be used for screening risk at residential sites at the Presidio and the calculations were required by the regulatory agencies. Although the Army calculated the values, the results appeared in an appendix at the end of the Feasibility Study and their use was suggested by the Army to be inappropriate. It should be noted, however, that most Presidio hazardous waste sites are immediately adjacent to residential housing. For this reason, community members advise that the residential PRG Ratio Assessment is an appropriate human health risk-screening tool, particularly at sites adjacent to residential housing.

*Community proposal:* Complete excavation of Fill Site 1 is recommended because the site occurs within the fresh water protection zone, it may be contributing to the contamination at El Polin Spring and it may be hazardous to children. Fill Site 1 is a candidate for complete removal under criteria in the U.S. Environmental Protection Agency's Application of CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, because of its small size and high groundwater conditions. Excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997, which state that landfills should be excavated, fill materials recycled when appropriate, and material from landfills consolidated at modern, appropriately designed and monitored off-site disposal facilities. The Feasibility Study's analysis of the cost of complete excavation should be revised to take account of the recent dramatic decline in off-site landfill disposal costs, the savings from reduced costs of institutional controls and monitoring, and the possible savings from appropriate recycling of fill materials.

## Landfill 2

*Army proposal:* Hot-spot excavation, institutional controls, groundwater monitoring.

*Community comments:* This landfill, which covers a tributary of the Tennessee Hollow Watershed, was dumped in a steep hillside ravine. The landfill is clearly eroding with debris now visibly emerging from portions of the landfill, known from the limited sampling to contain medical wastes. A seasonal spring flows down-slope from the landfill toward El Polin Spring and ultimately to the planned restored wetland at Crissy Field.

The fill material was poorly sampled with only five full-suite sampling locations for the one-acre site. Considerable risk is indicated in the ratio sums (which are applicable given the site's close proximity to Julius Kahn Playground and residential neighborhoods). The site has high potential risks to common birds. While the Feasibility Study portrays this landfill as not being a threat to public health or the environment, the Army cost estimate for removal of the landfill indicates that it contains more than 4,339 cubic yards of highly toxic fill material, suitable for disposal only at the most secure hazardous waste facility.

The Remedial Investigation and the Feasibility Study fail to discuss adequately the slope stability of Landfill 2. The underlying ravine containing expansive serpentine-derived soils and

artificial fill (misabeled Colma Formation on Army site maps) is susceptible to slope failure. The lower portion of the landfill material is saturated for six months of the year with water flowing through the dump. The water saturation of the fill has a significant bearing on the stability and erosion potential of the landfill, which have not been evaluated in the documents. The permanence of the landfill is questionable and long-term maintenance would likely be required. We are concerned that these hidden costs of institutional controls and maintenance would significantly affect the cost analysis of remedial alternatives.

The history of this disposal site is poorly researched in the documents. The authors fail to consider adequately that the dump occupies a small Army water supply reservoir used in the late 19th century and early 20th century, which could have a significant effect on the hydrology of the site. Surface water flowing from the face of the landfill was not sampled for contamination in the Remedial Investigation, although the water flows through El Polin picnic area, where children are commonly observed playing in the surface water. This omission represents a serious data gap in the Feasibility Study.

The discussion of this site should consider the planned restoration of the riparian corridor and spring area in the Tennessee Hollow Watershed. The spring area habitat covered by the landfill is one of the rarest of Presidio habitats. The Army's suggested remedy for this site could sharply curtail the planned future use of the area. Removal of the contaminated soil would alleviate the possibility of continued contamination of the surface water at El Polin Spring.

*Community proposal:* The removal of soils is appropriate, but "hot spot" excavation alone is insufficient. Removal of the landfill appears warranted to remove the uncertainties in protecting public health and the environment. Landfill 2 is a candidate for complete removal of all soils under criteria set forth in the U.S. EPA's Application of CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, because of its small size and high groundwater conditions. More complete excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced costs of institutional controls and monitoring, and the possible savings from appropriate recycling of landfill materials. The groundwater contamination should be monitored over time. We also recommend a radiological survey and assessment of this landfill for the possible presence of radioactive dials from the Nike maintenance facility.

### **El Polin Spring**

*Army proposal:* Institutional controls and water monitoring.

*Community comments:* El Polin Spring is a habitat area for native plants and wildlife and is frequently visited by park users. The water from the spring (or more accurately a group of springs) flows into El Polin picnic area, a children's play area. The Army's suggested remedies do not adequately consider the future uses of the site, which include restoration of the riparian corridor in the Tennessee Hollow Watershed. Clean water at El Polin Spring is an essential component of the planned restoration.



Community members believe the Feasibility Study's Ecological Risk Assessment did not adequately address the true nature, habitat value and extent of the El Polin site. Nevertheless, ecological risk is indicated by the summed score hazard indices in the existing assessment. Considerable risk to human health is indicated by the carcinogenic ratio sum (applicable because of the close proximity of residential structures and the presence of children at the picnic area).

*Community proposal:* The excavation of Fill Site 1 and Landfill 2 is recommended to remove the sources of contamination of the surface water at the spring. The surface water should be monitored until it has been determined that the contamination is reduced below hazardous levels.

### **Landfill E**

*Army proposal:* Dirt cover, institutional controls and groundwater monitoring.

*Community comments:* Landfill E, which covers a western tributary of the Tennessee Hollow Watershed to depths of up to 37 feet, is arguably the single most contaminated site at the Presidio. The waste contained in the dump is poorly documented and under-investigated. As at other Army bases of this same age, such as Fort Sheridan, the landfill could contain solvents, medical waste, transformers, and radioactive dials that have not corroded and released contamination. There is possible geotechnical instability within the landfill.

The carcinogenic ratio sum (a reasonable screening tool given the close proximity of residential structures) suggests a severe risk. Moreover, of the 29 full-suite sample points taken at this landfill, only six were used to conduct the Human Health Risk Assessment because of a decision to exclude from consideration samples taken from below a depth of six inches. The Army justification that humans will be exposed only to the top six inches of material ignores obvious future exposure scenarios such as erosion, geotechnical instability and necessary maintenance activities that will bring people into contact with contaminated soil below six inches.

The Ecological Hazard Index is calculated for each ecological receptor at a site to show which receptors are most susceptible to identified hazardous substances. Alternatively, the indices at a given site may be summed across all receptors to give an indication of which sites pose the most risk to the group of representative species. When this calculation is performed at Landfill E, this landfill is ranked in the top five of all Presidio sites for risk to ecological receptors. (See Attachments 3 and 4.)

The proposed soil cover is an inadequate remedy in view of the future restoration of the Tennessee Hollow Watershed and the impermanence and cost of maintenance of such an approach. The proposed remedy does not protect riparian restoration, does not protect fresh water from becoming contaminated by percolation through landfill materials, and could restrict future open space uses of the area.

*Community proposal:* The preferred remedy is excavation and off-site disposal of the landfill. Alternatively, the landfill materials should be isolated from the surrounding environment and a pathway should be created for fresh water to flow around the landfill to the creek below.

The cost of excavating the original 76,000 cubic yards estimate of landfill material volume should be compared with the cost of a completely engineered cap with appropriate drainage, gas monitoring and leachate collection systems.

Landfill E is a candidate for complete removal of all soils under criteria set forth in the U.S. EPA's Application of CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, particularly because of high groundwater conditions encountered there. More complete excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced costs of institutional controls and monitoring, and the possible savings from the recycling of landfill materials where appropriate. We also recommend a radiological survey and assessment of landfills for the possible presence of radioactive dials from Nike maintenance facility.

## **II. Northeastern Area of the Presidio**

### **Building 609**

*Army Proposal:* No action was proposed in the Feasibility Study.

*Community comments:* Building 609/610 is the Presidio Commissary constructed in 1987. The Remedial Investigation and Feasibility Study discussions of this site are flawed because of an error in historical research. Although the Commissary was designated as Building 609 when it was built in 1987, historical records show that an earlier Building 609 was located 150 feet to the east. The present Building 609 was constructed over the site of a former motor pool facility and railroad tank car pumping station. It was studied in the Remedial Investigation for a pesticide spill that occurred in the former Building 609, and was not tested for possible contamination from the motor pool. Although this error was reported to the Army in detailed comments by a RAB community member in May and June of 1996, the mistake was perpetuated in the revised Remedial Investigation and the Feasibility Study in 1997. A recent historical study of the motor pool complex by IT Corporation has now identified former buildings with environmental concerns at this location.

*Community proposal:* A new investigation of the identified sites at the former motor pool location should begin. The erroneous Building 609 discussions in the Remedial Investigation and Feasibility Study should be replaced.

### **Building 1167**

*Army proposal:* No action.

*Community comments:* Historic maps indicate a former incinerator behind building 1167.

*Community proposal:* Investigate the former location of this incinerator and other incinerators shown on historical maps for contamination.

### **Fill Site 6**

*Army proposal:* Institutional controls and groundwater monitoring.

*Community comments:* While several data points were evaluated at this site, the data for the most likely contaminants were estimated or detrimentally affected by poor quality control and considered unreliable. Contrary to the assumption in the Feasibility Study, the site will not be used as a parking lot in the future according to the Park General Management Plan, but rather as a grassy courtyard for picnics and recreation for people working nearby and other park users. Construction debris containing asbestos, lead-based paint and other potential contaminants exist in the fill creating a potential hazard.

*Community proposal:* Landfill contents should be excavated and disposed of off-site in order to protect recreational users and help clean up and prevent further contamination of groundwater resources. Excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced or eliminated costs of institutional controls and monitoring, and the possible savings from the recycling of landfill materials where appropriate.

## **III. Southwestern Area of the Presidio**

### **Nike Facility**

*Army proposal:* Limited excavation of soil contamination and groundwater monitoring were recommended by the Feasibility Study. After RAB community members submitted a report noting that the underground magazines contained leaking hydraulic oil tanks (see Advisory Report on Battery Caulfield, Nike Missile Site, April 9, 1997), the Army developed a plan to remove the hydraulic fluid tanks and piping from the three magazines and pressure wash the interiors of the structures in 1998.

*Community comments:* The Feasibility Study should be brought up to date in regard to information reported by community members. The Advisory Report and other comments by community members have noted the following information in addition to the presence of the hydraulic fuel tanks:

A small fireproof personnel shelter in each magazine contains 384 square feet of .5-inch thick asbestos covering that is partially submerged by groundwater. The magazines were painted with zinc and lead-based fire-resistant paint that also contains antimony. The Preliminary Assessment also indicates that the paint at the Nike facility contains chrome. The removal of similar paint by sandblasting at the now-restored Nike missile site at Fort Barry in the Marin Headlands produced a total of six tons of contaminated paint and sand waste per magazine. The magazines are seasonally submerged by groundwater, creating the potential for contamination by hydraulic oil, metal-based paint, antimony from rusting metal, and asbestos. Two-thirds of the magazine water drains into the surrounding groundwater each summer. The location of the drain line surface discharge has not been investigated and may be located at a seep below the Nike facility. Community RAB members commend the 1998 Army plan to remove the hydraulic fluid systems. We remain concerned, however, about the asbestos and lead-based paint that will remain in the magazines, potentially contaminating the groundwater.

Community members are also concerned that radioactive dials from the Nike maintenance facility have been disposed of at landfills in the Presidio. In a similar situation at Fort Sheridan, a radiological survey and assessment of landfills was performed to assess the risk from the radioactive dials. No such survey of landfills has been performed at the Presidio.

*Community proposal:* The asbestos and lead-based paint should be removed prior to filling the magazines with sand or soil fill. We also advise allowing Colonel Milton Halsey at the restored Nike facility at Fort Barry to salvage hydraulic valves from the magazines. A large quantity of rusting metal could also be salvaged from the magazines, removing the threat of antimony contamination. Finally, the magazine locations could be covered with surface sand and re-contouring for future open space use and native plant restoration. The possibility that the empty magazines should be considered to be abandoned underground storage tanks (requiring proper closure) should be investigated by the regulatory agencies.

### Nike Swale

*Army proposal:* No action.

*Community comments:* No sampling has been performed at this site. The Army's proposed remedy is based on a model and not on actual environmental data collected at the site. The study also fails to consider the seasonal wetlands at the swale.

*Community proposal:* Further investigate this site to take account of the potential for wetland restoration in this area and the extensive volunteer activity in native plant restoration. Data should be collected during the wet season and biological risk estimation should be carried out on aquatic receptors. Groundwater seeps should be sampled for possible contamination from Nike magazine drains discharged to unidentified surface locations.

## **Graded Area 9**

*Army proposal:* No action.

*Community Comments:* No data was collected at Graded Area 9 that could have been used to conduct a Human Health Risk Assessment, and only three samples were available to the Ecological Risk Assessment. Only five sampling locations were used to collect samples for the 2.5-acre site. Considerable ecological risk is nevertheless indicated from the summed Hazard Index scores for five receptors. Park volunteers extensively use this area for training and teaching about native plants.

*Community proposal:* In light of the uncertainties in the investigation and risk assessments, complete excavation and off-site disposal of the fill material is warranted. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced or eliminated costs of institutional controls and monitoring, and the possible savings from the recycling of landfill materials where appropriate.

## **Building 1750**

*Army proposal:* No action.

*Community comments:* A recent Lawrence Livermore study of MTBE contamination lists the Presidio public water supply well field as contaminated with MTBE. The apparent source of this contamination would be the former fuel tanks at Building 1750. The MTBE contamination is poorly investigated.

*Community proposal:* Additional groundwater monitoring down-gradient of Building 1750 to investigate MTBE contamination of the drinking water aquifer.

## **Lobos Creek**

*Army proposal:* No action.

*Community comments:* The Army's proposal does not recognize potential contamination sources, such as the MTBE pollution, that could have an impact on future water resources.. Groundwater monitoring wells at nearby Landfill 10 appear to be too shallow to monitor adequately the groundwater quality down-gradient of landfill material.

*Community proposal:* Additional monitoring of groundwater.

## IV. Central Western Area of the Presidio

### Landfill 4

*Army proposal:* Institutional controls and groundwater monitoring. No cleanup or disposal of contaminated soils.

*Community comments:* Landfill 4, which is located near the Rob Hill group camp site to the southwest and residential structures to the north, appears to be an ongoing potential hazard to human health and the environment. Community members are concerned that the waste material in the landfill is poorly documented and descriptions of it in the studies downplay the potential for contamination. A large variety of heavy metals and chemicals exists at the site. A storm drain system extending beneath the site was not sampled or discussed in the documents.

Potential toxicity is suggested by the presence of numerous large dead trees in the center of this disposal site. Community members are concerned that 10 available sampling points at the 3-foot level were screened out of the Ecological Risk Assessment because of a decision to eliminate from consideration samples taken at or below a depth of 3 feet. The Human Health Risk Assessment used only a single full-suite data point and five lead XRF samples, while the Ecological Risk Assessment used only one extra sample location. Although the sampling is clearly inadequate, considerable risk is nevertheless indicated by the non-carcinogenic ratio sum (applicable because of the close proximity to residential structures and the Rob Hill group camp site). The Ecological Risk Assessment suggests that the site may be hazardous to common birds and small mammals.

The remedies proposed in the Feasibility Study do not adequately address the possible range of future uses of this site. Park workers restoring and maintaining planned native plant communities at the site could come in contact with contaminated soil. The Army's plan to limit contact with polluted soil through institutional controls (land use restrictions) would mean that the site could not be used as open space despite its close proximity to the group camp and residential housing.

*Community proposal:* To allow full and appropriate use of this site in the future, complete excavation and off-site disposal is recommended. Landfill 4 is a candidate for complete removal of all soils under criteria in the U.S. EPA's Application of CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, because of its small size. Excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced costs of institutional controls and monitoring, and the possible savings from appropriate recycling of landfill materials where appropriate. We also recommend a radiological survey and assessment of this landfill for the possible presence of radioactive dials from the Nike maintenance facility.



### **Fill Site 5**

*Army proposal:* Institutional controls.

*Community comments:* No data points were collected that could be used to perform a Human Health Risk Assessment. Only a single data point was available to perform the Ecological Risk Assessment.

*Community proposal:* The site is poorly characterized and the landfill materials should be excavated and disposed of off site. Fill Site 5 is a candidate for complete removal of all soils under criteria in the U.S. EPA's Application of CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, because of its small size. Excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced costs of institutional controls and monitoring, and the possible savings from appropriate recycling of landfill materials.

### **Transfer Station**

*Army proposal:* Limited excavation.

*Community comments:* Several data points were collected at this site. However, in view of the distribution of the samples in small tightly spaced areas, undiscovered large hot spots could still exist. The excavation of only the identified hot spots is therefore is an inadequate remedy.

*Community proposal:* Additional sampling or excavation and off-site disposal of surface soil.

### **Battery Howe Wagner**

*Army proposal:* Groundwater monitoring.

*Community comments:* This disposal site, placed over an underground concrete fortification, is directly across the street from residential housing and a playground. Residents have expressed strong concerns about the contaminated surface water flowing across the road and into the housing area and playground. The Feasibility Study fails to consider the proximity of the residential area. The carcinogenic ratio sum for this site, which is applicable because of the close proximity of residences, indicates considerable risk. The summed Hazard Index scores also indicate clear ecological risk. The investigation is inadequate because the source of groundwater contaminants, including carbon tetrachloride and hexavalent chromium, has not been identified. Because the source of these pollutants in Battery Howe Wagner groundwater has not been located thus far, it appears possible that former industrial buildings demolished adjacent to the battery could have used chrome and industrial solvents. The demolition debris from these buildings may have been discarded at this dumpsite.

The Remedial Investigation and Feasibility Study fail to recognize that the dump occurs in drainage where a fresh water spring habitat formerly existed. Field observations by community members indicate that for six months of the year, a fresh water spring discharges from the drainage immediately below the fill area to a surface stream. Water seepage from the landfill is also observed flowing across the road and into the residential area and playground. This discharge to surface water was not sampled in the Remedial Investigation and represents a serious data gap in the Feasibility Study. The proposed remedy of no action and monitoring is inadequate because it does not take account of the nearby residential land use and the possible range of future open-space uses at the site itself.

*Community proposal:* Excavation and off-site disposal of portions and possibly all of the landfill material and affected soils should be considered. This landfill is a candidate for complete removal of all soils under criteria in the U.S. EPA's Application of CERCLA Municipal Landfill Presumptive Remedy to Military Landfills, because of its small size. Excavation is also called for by the Presidio Landfill Closure Principles adopted by the Presidio RAB in May 1997. The analysis of the cost of complete excavation should be revised to take account of the recent decline in off-site landfill disposal costs, the savings from reduced costs of institutional controls and monitoring, and the possible savings from appropriate recycling of landfill materials.

In the meantime, the Battery Howe Wagner site should be monitored and localized soil contamination excavated and removed. The location of former industrial buildings not discussed in the Remedial Investigation and Feasibility Study should be investigated for contamination.

### **Building 1244**

*Army proposal:* No action.

*Community comments:* Historical documents indicate potentially contaminating activity not reported thoroughly in Army documents. Prior environmental activities of concern include a diesel engine repair shop, extensive floor trenches, and underground sumps. Comparison of historical building plans shows that the majority of environmental features are not shown on Army investigation site maps of this building.

*Community proposal:* Revise site maps to incorporate historical data. Additional sampling of subterranean trenches and sumps shown on historical building plans is needed. Evaluate wipe sample results for evidence of contamination.

## **Building 1245**

*Army proposal:* No action.

*Community comments:* Historical records indicate chrome usage at this site.

*Community proposal:* Sample the site for chrome contamination. Evaluate wipe sample results for evidence of contamination.

## **V. Coastal Western Area of the Presidio**

### **Disturbed Area 1 (excluding mounded area)**

*Army proposal:* No action.

*Community comments:* Considerable ecological risk is shown by the sampling results. This dump is a hazard to recreational use of beach areas. While technically challenging, the removal of dump material is feasible. If there is a future slope failure of fill material, the National Park Service could be burdened with liability for removing it from the beach.

*Community proposal:* Sufficient landfill material should be excavated to prevent continued exposure of hazardous substances associated with the mounded area and seep in the central portion of this site. The excavation should include the estimated area containing contamination that exceeds cleanup goals.

### **Disturbed Area 1 (mounded area)**

*Army proposal:* No action.

*Community comments:* No data was collected to evaluate human health at this site. No full suite data was collected at all. Considerable risk is nevertheless indicated for five ecological receptors. The area is easily accessible to hikers from a nearby parking lot.

*Community proposal:* No action is an unacceptable remedy for this site. Complete excavation is warranted and recommended, particularly in view of the high lead levels in this area that form the source area for lead contamination of ground water and the fresh water seep.

### **Disturbed Area 1A**

*Army proposal:* No action.

*Community comments:* Evaluation of this site is based on only two points. The characterization is inadequate.

*Community proposal:* If no further investigation can be conducted, the estimated area that exceeds cleanup goals should be excavated.

### **Disturbed Area 2**

*Army proposal:* No action.

*Community comments:* This landfill is nearly an acre in size but was sampled in only three locations to determine human health risk. Common sense suggests that undiscovered large hot spots may yet exist. The limited sampling does not meet statistical standards for validity. No action is an inadequate remedy because park volunteer and visitor activity in this area is high.

*Community proposal:* Complete excavation and off-site disposal of estimated area that exceeds cleanup goals is warranted and recommended.

### **Disturbed Area 3**

*Army proposal:* No action.

*Community comments:* The summed Ecological Hazard Index scores suggest considerable risk at this site. This is a very large site and the sample distribution is quite widely dispersed. Undiscovered large hot spots may exist.

*Community proposal:* Complete excavation and off-site disposal of estimated area that exceeds cleanup goals is warranted and recommended.

## **VI. Basewide Issues**

### **Uninvestigated Sites**

*Army proposal:* No action.

*Community comments:* Community Members believe that significant issues in historical research remain unresolved from the Remedial Investigation. Community members reported this concern to the Army two years ago. Because environmental sampling in the remedial investigation is based upon the prior identification of historical hazardous substance use, the inadequacy of historical research is of serious concern.

For example, a mistake in historical research indicates that the entire Building 609 discussion in the Remedial Investigation and Feasibility Study reports is erroneous (discussed above). Other sites for which building maps and historical plans suggest potential contamination have not been studied at all. Among other historical sources, the findings of aerial photograph studies by the US EPA in 1989 have not been fully incorporated into the Remedial Investigation and Feasibility Study, and potentially contaminated sites identified by the U.S. Environmental Protection Agency have not been investigated. The drum storage area at Battery McKinnon-Stotsenberg (Building 1430) shown in historical aerial photographs is of particular concern. The contents of the drums have never been identified or discussed.

A preliminary review by RAB community members indicates that the following buildings (existing and demolished) appear to have environmental concerns: gas stations M30, 601, 616 and 626; buildings 95, 534, 560, 613, 616, 1242, 1286, 1339; a metal salvage facility near Battery Godfrey; additional incinerator locations, greenhouse-nursery (buildings 801, 803, 814, 837, 808) in Tennessee Hollow; former artesian water supply wells at Crissy Field (building 231); and Battery McKinnon-Stotsenberg (Building 1430). Historical maps show a “dipping tank” facility to the north of building 667. This facility is not discussed in the document. It is likely that the facility used insecticides and metals.

*Community proposal:* Community members understand that the Army, through its contractor IT Corporation, is currently conducting an examination of historical documents contained in the NPS records center. IT Corporation should be directed to identify and evaluate historical data, including maps and building plans, containing evidence of environmental operations. Sites that require further study should be identified and investigated as soon as possible.

### Above-Ground Storage Tanks

*Army Recommendation:* Most of the aboveground storage tanks (ASTs) at the Presidio were removed during an Army compliance program before 1994, with no federal or state environmental agency oversight. The Army has stated that no soil samples, laboratory analyses, or closure reports were required during the tank removals.

*Community Comments:* Community members are concerned that the lack of documentation could prevent the identification of possible accidental soil contamination that occurred during tank removal. This appears to have been the situation at the Building 300 area at the Presidio Golf Course, where recent remedial excavation seems to indicate that a large area of soil contamination was inadvertently left behind when a former above-ground storage tank was removed from this site. This soil contamination was discovered accidentally during unrelated construction activity.

Previous requests for information on the shoreline ASTs at the Directorate of Engineering and Housing indicate that Army documentation on the ASTs is unavailable. The Army has stated that the existing Enhanced Preliminary Assessment report contains erroneous text, tables and photographs concerning the size, location and contents of the ASTs. The Crissy Field Remedial Action Plan maps do not show the location of removed ASTs or discuss their removal.

Community members are concerned that AST closure procedures may not have been adequate to protect human health and the environment and may have resulted in areas of accidental soil and groundwater contamination at these locations.

*Community Recommendation:* The Army should indicate the location of all removed ASTs on current project maps. Additional investigation, soil sampling and closure reports should be undertaken to determine whether soil contamination was inadvertently ignored. Areas of soil pollution should be immediately removed to protect human health and the environment.

### **Lead-Based Paint in Soil**

*Army proposal:* No action on non-residential buildings.

*Community comments:* The community members would like to thank the Department of Toxic Substances Control for taking direct action in investigating lead-based paint (LBP) contamination at the Presidio. We note that the DTSC sampling at the building formerly occupied by the Chinese American International School indicates that lead-based paint contamination exists even around brick buildings, and therefore is likely to also occur at other buildings. The soil samples indicated that lead contamination is present around the building; one sample was close to Army cleanup levels. The sampling was easily performed and the results were quickly obtained by the DTSC. Because of the serious effects of lead on children, we take the issue of lead contamination very seriously. We note that the RAB has on numerous previous occasions expressed concern over the issue of lead-based paint contamination. Sufficient evidence has now been accumulated to suggest that lead contamination is prevalent around buildings throughout the Presidio. This contamination around non-residential buildings is cause for serious concern.

The identification of LBP contaminated areas would now be prudent in view of the fact that the majority of stakeholders are convinced that the contamination is widespread. The majority of stakeholders and regulatory agencies believe the responsibility to sample the soil around non-residential buildings clearly lies with the Army. Sampling of the soil with field instruments (XRF) is fast and inexpensive. We recommend against the use of composite sampling because the lead is likely to occur in hot spots and composite sampling masks hot spots. We believe there is a lack of community acceptance with the present stalemate in high-level policy decision-making on this issue.

*Community proposal:* Community members urge that the identification of the risk of lead-based paint contamination begin immediately on non-residential buildings in the interest of public health. The Army's previous work at hazard abatement resulted in LBP-contaminated areas of soil being covered with landscaping bark as a temporary way to keep children from contacting the contaminated soil. We believe that a better solution is to remove the lead metal from the soil. We members note the Army's strong support of phytoremediation as a economic method to remove lead metal from soil. Other methods of fixating the lead in the soil may also be available.



We look forward to discussing these issues at future Restoration Advisory Board meetings. If you have any questions, please contact us care of Mark Youngkin at email: mark@site2c.com.

Sincerely,

Saul Bloom, Julia Cheever, Arlene Gemmill, Molly Hooper, Doug Kern, LeeAnn Lahren, Scott Miller, Janet M. Monaghan, Howard Nathel, Peter J. O'Hara, Eleanor Roman, Louis Rosenbaum, Joanne Chow Winship, Tracy Wright, Mark Youngkin

Community Members  
Presidio Restoration Advisory Board

cc: RAB Community Members  
B.J. Griffin, General Manager, Presidio Project  
Roberta Blank and Brian Ullensvang, National Park Service  
James Meadows, Presidio Trust  
Michael Work, U.S. Environmental Protection Agency  
Joseph Chou, California Regional Water Quality Control Board  
Martha Walters, City of San Francisco  
John Buck, Army Environmental Center  
Roger Henderson and Bruce Handel, U.S. Army Corps of Engineers

Attachments:

Attachment 1, Summary of Human Health Risk Assessment for Presidio of San Francisco  
Sorted by Residential Non-Carcinogenic Risk  
Attachment 2, Summary of Human Health Risk Assessment for Presidio of San Francisco  
Sorted by Residential Carcinogenic Risk  
Attachment 3, Summary of Ecological Hazard Indexes for Presidio of San Francisco  
(Hazard Index High)  
Attachment 4, Summary of Ecological Hazard Indexes for Presidio of San Francisco  
(Hazard Index Low)

**Attachment 1: Summary of Human Health Risk Assessment for Presidio of San Francisco  
Sorted by Residential Non-Carcinogenic Risk**

Site	Residential Carcino- genic Ratio Sum	Residential Non- Carcino- genic Ratio Sum	Industrial Worker Carcino- genic Risk	Industrial Worker Non- Carcino- genic Risk	Institu- tional Worker Carcino- genic Risk	Institu- tional Worker Non- Carcino- genic Risk	Construc- tion Worker Carcino- genic Risk	Construc- tion Worker Non- Carcino- genic Risk	Commer- cial Office Worker Carcino- genic Risk	Commer- cial Office Worker Non- Carcino- genic Risks	Recrea- tional Visitor Carcino- genic Risk	Recrea- tional Visitor Non- Carcino- genic Risk
Wetlands Restoration Area	6.10E-03	569					5.90E-07	0			1.40E-06	0
Landfill 4	2.46E-05	355										
Bldg. 979 Groundwater	2.87E-02	303					7.20E-08	0				
Landfill 2	1.79E-03	110									9.50E-07	0
Landfill E (plus soil cover)	5.67E-02	96									7.50E-07	2
Baker Beach Disturbed Area 1	4.24E-06	48									7.40E-07	1
FPOGS	4.93E-04	47									7.80E-05	2
Non-Wetlands Restoration Area Groundwat	8.94E-03	41										
Bldg. 923	6.65E-05	38	1.60E-05	1								
Baker Beach Disturbed Area 3	8.44E-06	37									2.40E-08	2
Fill Site 6	1.34E-02	33			2.90E-03	21						
Bldg. 950	5.91E-05	33									4.60E-06	0
Fill Site 1	2.03E-03	21										
Nike Facility Magazines/Storage Area	3.41E-04	17									9.70E-05	1
Bldg. 640/643	2.84E-06	16			2.40E-09	1						
Bldg. 937	1.75E-06	10	6.80E-08	1								
Battery Howe Wagner	9.71E-03	9										
Nike Facility Groundwater	1.60E-03	9			3.40E-04	4						
Lobos Creek	3.87E-05	7									5.00E-07	0
Sewer Lift Station #2	0.00E+00	7										0
Bldg. 1351	3.37E-06	7	3.90E-07	1								
Transfer Station	9.08E-06	6									3.00E-06	0
Mountain Lake	9.95E-07	6										0
Bldg. 633	0.00E+00	5										
Bldg. 1167	0.00E+00	5				1						
Bldg. 662	1.03E-07	5				0						
El Polin Spring	5.28E-04	4									2.30E-07	0
Bldg. 215	3.58E-04	4			7.40E-05	1						
Bldg. 1057 (no residential use)	1.18E-06	4				1						
Bldg. 1369	0.00E+00	3				1						
Bldg. 1244	0.00E+00	3				1						
Fill Site 7	1.73E-04	2									1.20E-05	0
Graded Area 9	1.68E-06	1										
Bldg. 302	0.00E+00	0										
Bldg. 1388	0.00E+00	0				1						
Bldg. 949	0.00E+00	0										
Baker Beach Disturbed Area 4	1.22E-06	0									4.00E-07	0
Baker Beach Disturbed Area 2	1.14E-05	0									4.80E-06	
Baker Beach Disturbed Area 1a	4.03E-05	0									2.10E-05	
Bldg. 642	0.00E+00	0										
Nike Facility Bldg 1450/1451	7.22E-09	0										
Fill Site 5	1.93E-06	0										
East of Mason	1.01E-05	0									4.10E-06	0
Bldg. 1245	3.23E-07	0				1						
Bldg. 228	1.38E-08	0								1		
Bldg. 680	2.83E-04	0			5.70E-05	1						
Bldg. 1151/1152	1.71E-04	0			3.40E-05	1						
Bldg. 609	5.35E-07	0										
Bldg. 669						1						
Bldg. 1750						1						
Bldg. 920						1						
Bldg. 926/927						1						
Baker Beach Disturbed Area 1 (mounded area)												
Bldg. 1153												
Sewer Lift Station #1												
Baker Beach Disturbed Area Seep												
Bldg. 231												
Bldg. 1450												
Bldg. 1451												
Bldg. 215 Groundwater												
Fill Site 1 Groundwater												
Landfill 2 Groundwater												
Fill Site 6 Groundwater												
Fill Site 7												
Wetlands Rest Area Grndwater (0% Dilution)												
Wetlands Rest Area Grndwater (50% Dilution)												
Wetlands Rest Area Grndwater (90% Dilution)												
Battery Howe Wagner Groundwater												
Nike Swale												

Source: Table prepared for RAB community member comments from data in the 1997 Army Remedial Investigation, Main Installation, Presidio of San Francisco

**Attachment 2: Summary of Human Health Risk Assessment for Presidio of San Francisco  
Sorted by Residential Carcinogenic Risk**

Site	Residential Carcino- genic Ratio Sum	Residential Non- Carcino- genic Ratio Sum	Industrial Worker Carcino- genic Risk	Industrial Worker Non- Carcino- genic Risk	Institu- tional Worker Carcino- genic Risk	Institu- tional Worker Non- Carcino- genic Risk	Construc- tion Worker Carcino- genic Risk	Construc- tion Worker Non- Carcino- genic Risk	Commer- cial Office Worker Carcino- genic Risk	Commer- cial Office Worker Non- Carcino- genic Risks	Recrea- tional Visitor Carcino- genic Risk	Recrea- tional Visitor Non- Carcino- genic Risk
Landfill E (plus soil cover)	5.67E-02	96									7.50E-07	2
Bldg. 979 Groundwater	2.87E-02	303					7.20E-08	0				
Fill Site 6	1.34E-02	33			2.90E-03	21						
Battery Howe Wagner	9.71E-03	9										
Non-Wetlands Restoration Area Groundwat	8.94E-03	41										
Wetlands Restoration Area	6.10E-03	569					5.90E-07	0			1.40E-06	0
Fill Site 1	2.03E-03	21										
Landfill 2	1.79E-03	110									9.50E-07	0
Nike Facility Groundwater	1.60E-03	9			3.40E-04	4						
El Polin Spring	5.28E-04	4									2.30E-07	0
FPCGS	4.93E-04	47									7.80E-05	2
Bldg. 215	3.58E-04	4			7.40E-05	1						
Nike Facility Magazines/Storage Area	3.41E-04	17									9.70E-05	1
Bldg. 680	2.83E-04	0			5.70E-05	1						
Fill Site 7	1.73E-04	2									1.20E-05	0
Bldg. 1151/1152	1.71E-04	0			3.40E-05	1						
Bldg. 923	6.65E-05	38	1.60E-05	1								
Bldg. 950	5.91E-05	33									4.60E-06	0
Baker Beach Disturbed Area 1a	4.03E-05	0									2.10E-05	
Lobos Creek	3.87E-05	7									5.00E-07	0
Landfill 4	2.46E-05	355										
Baker Beach Disturbed Area 2	1.14E-05	0									4.80E-06	
East of Mason	1.01E-05	0									4.10E-06	0
Transfer Station	9.08E-06	6									3.00E-06	0
Baker Beach Disturbed Area 3	8.44E-06	37									2.40E-08	2
Baker Beach Disturbed Area 1	4.24E-06	48									7.40E-07	1
Bldg. 1351	3.37E-06	7	3.90E-07	1								
Bldg. 640/643	2.84E-06	16			2.40E-09	1						
Fill Site 5	1.93E-06	0										
Bldg. 937	1.75E-06	10	6.80E-08	1								
Graded Area 9	1.68E-06	1										
Baker Beach Disturbed Area 4	1.22E-06	0									4.00E-07	0
Bldg. 1057 (no residential use)	1.18E-06	4				1						
Mountain Lake	9.95E-07	6										0
Bldg. 609	5.35E-07	0										
Bldg. 1245	3.23E-07	0				1						
Bldg. 662	1.03E-07	5				0						
Bldg. 228	1.38E-08	0								1		
Nike Facility Bldg 1450/1451	7.22E-09	0										
Sewer Lift Station #2	0.00E+00	7										0
Bldg. 633	0.00E+00	5										
Bldg. 1167	0.00E+00	5				1						
Bldg. 1369	0.00E+00	3				1						
Bldg. 1244	0.00E+00	3				1						
Bldg. 302	0.00E+00	0										
Bldg. 1388	0.00E+00	0				1						
Bldg. 949	0.00E+00	0										
Bldg. 642	0.00E+00	0										
Bldg. 669						1						
Bldg. 1750						1						
Bldg. 920						1						
Bldg. 926/927						1						
Baker Beach Disturbed Area 1 (mounded area)												
Bldg. 1153												
Sewer Lift Station #1												
Baker Beach Disturbed Area Seep												
Bldg. 231												
Bldg. 1450												
Bldg. 1451												
Bldg. 215 Groundwater												
Fill Site 1 Groundwater												
Landfill 2 Groundwater												
Fill Site 6 Groundwater												
Fill Site 7												
Wetlands Rest Area Grndwater (0% Dilution)												
Wetlands Rest Area Grndwater (50% Dilution)												
Wetlands Rest Area Grndwater (90% Dilution)												
Battery Howe Wagner Groundwater												
Nike Swale												

Source: Table prepared for RAB community member comments from data in the 1997 Army Remedial Investigation, Main Installation, Presidio of San Francisco

# Attachment 3: Summary of Ecological Hazard Indexes for Presidio of San Francisco

## "Hazard Index High"

Sum of highest value of hazard range for each representative species at each site; sites ranked according to summed score.

Site	American Robin	Mourning Dove	Plants & Soil Fauna	Western Harvest Mouse	Valley Pocket Gopher	Aquatic Plants	Aquatic Invertebrates	Fish & Amphibians	Mallard Duck	Sand Piper	Peregrine Falcon	Red-Tailed Hawk	Raccoon	Summed HI Score	Army Preferred Alternative
Bldg. 950	5,000	700	30	100	9				0	500	2	0	0	6,341	excavation & phytoremediation
Baker Beach Disturbed Area 3	3,000	400	2,000	30	7						2	0	0	5,439	excavation & phytoremediation
Bldg. 640/643	3,000	500	500	80	7						1	0	0	4,088	soil cover
Landfill E (plus soil cover)	1,000	30	2,000	2							0	0	0	3,033	no action
Baker Beach Disturbed Area 1 (mounded area)	2,000	600	300	30	9						0	0	0	2,939	limited excavation of soil
Nike Facility Magazines/Storage Area	2,000	400	30	80	20						2	0	0	2,532	limited excavation of soil
Landfill 2	2,000	200	20	10	2						1	0	0	2,233	limited excavation of soil
Transfer Station	900	100	500	100	30						0	0	0	1,630	no action, institutional controls
Graded Area 9	300	30	1,000	200	50	400	400	400	3	4	0	0	0	1,580	no action
Wetlands Restrtn Area Gmdwater (0% Dilution)															
Landfill 4	900	200	1	6	1						0	0	0	1,209	no action, institutional controls
Battery Howe Wagner	200	30	800	2	0						0	0	0	1,108	no action
Bldg. 633	700	200	1	7	2						0	0	0	1,033	no action
Baker Beach Disturbed Area 1	300	40	30	200	50						0	0	0	910	no action
Wetlands Restrtn Area Gmdwater (50% Dilution)															
Baker Beach Disturbed Area Seep	0	0	0	0		200	200	200	2	2	0	0	0	620	no action
Mountain Lake	0	0	0	0							0	0	0	605	no action
Sewer Lift Station #2	100	30	7	200	40	30	400	30	200	10	0	0	0	463	no action
Bldg. 1167	200	70	20	3	1	80	80	80			0	0	0	451	no action, institutional controls
Bldg. 1153	200	2	0	10	0						0	0	0	377	limited excavation of soil
El Polin Spring	0	0	0	1							0	0	0	294	no action
Bldg. 1351	100	30	20	30	1	70	70	70			0	0	0	212	limited excavation of soil
Lobos Creek	0	0	0	1							0	0	0	212	no action
Sewer Lift Station #1	100	40	5	1	0	20	20	20	100	9	0	0	0	181	no action
Bldg. 662	90	30	10	1	0	40	40	40			0	0	0	170	no action
Wetlands Restrtn Area Gmdwater (90% Dilution)															
FPOCS	80	30	8	2	1				0	0	0	0	0	146	no action
Bldg. 680	100	2	0	10	0						0	0	0	131	no action
Wetlands Restoration Area	40	2	20	2	0						0	0	0	121	no action
Nike Swale															
East of Mason	40	2	10	2	0	0	30	0	0	2	0	0	0	112	limited excavation of soil
Baker Beach Disturbed Area 4	40	0	0	0	0	0	40	0	2	30	1	0	0	97	no action
Bldg. 302	30	1	8	1	0						0	0	0	72	no action
Bldg. 609	9	0	0	0	0						0	0	0	55	limited excavation of soil
Bldg. 1369	5	2	1	0	0						0	0	0	40	no action
Baker Beach Disturbed Area 2	6	0	0	0	0						0	0	0	39	no action
Fill Site 5	4	0	0	0	0						0	0	0	9	no action
Baker Beach Disturbed Area 1a	0	0	1	0	0						0	0	0	8	no action
Bldg. 1245	1	0	0	0	0						0	0	0	6	no action, institutional controls
Fill Site 1	0	0	0	0	0						0	0	0	4	no action
Bldg. 1368	0	0	0	0	0						0	0	0	1	no action
Bldg. 228	0	0	0	0	0						0	0	0	0	no action

\*0\* indicates 0.5 > HI > 0

\*1\* indicates 1.5 > HI ≥ 0.5

Source: Prepared for RAB community member comments from data in the 1997 Army Remedial Investigation, Main Installation, Presidio of San Francisco



Attachment 4: Summary of Ecological Hazard Indexes for Presidio of San Francisco

"Hazard Index Low"

Sum of lowest value of hazard range for each representative species at each site; sites ranked according to summed score.

Site	American Robin		Mourning Dove		Plants & Soil Fauna		Western Harvest Mouse		Valley Pocket Gopher		Aquatic Plants		Aquatic Invertebrates		Fish & Amphibians		Mallard Duck		Sand Piper		Peregrine Falcon		Red-Tailed Hawk		Raccoon		Summed HI Score		Army Preferred Alternative	
	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High	HI Low	HI High				
Landfill E	10	1	1	2,000	1	1	1	0	0	0	200	200	200	200	200	200	0	0	1	1	0	0	0	0	0	0	2,012	0	soil cover	0
Wellands Restrtn Area Gmdwater (0% Dilution)																											601	0	no action	0
Wellands Restrtn Area Gmdwater (50% Dilution)											100	100	100	100	100	100	0	0	0	0	0	0	0	0	0	0	301	0	no action	0
Mountain Lake											70	70	70	70	70	70	2	2	0	0	0	0	0	0	0	0	212	0	no action, institutional controls	0
Baker Beach Disturbed Area 3	100	20	0	80	2	0	0	0	0	0																0	202	0	no action, institutional controls	0
Graded Area 9	50	7	0	20	40	0	0	0	0	0	30	60	30	30	30	30										0	123	0	no action, institutional controls	0
Baker Beach Disturbed Area Seep	0	0	0	0	0	0	0	0	0	0	30	30	30	30	30	30										0	120	0	no action	0
El Pollin Spring	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	90	0	no action	0
Transfer Station	40	6	0	20	20	4	0	0	0	0	0	0	0	0	0	0										0	90	0	limited excavation of soil	0
Bldg. 950	60	7	0	10	5	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	87	0	excavation & phytoremediation	0
Baker Beach Disturbed Area 1	40	7	0	20	10	3	0	0	0	0	0	0	0	0	0	0										0	80	0	no action	0
Bldg. 640/643	60	8	0	5	2	0	0	0	0	0	0	0	0	0	0	0										0	75	0	excavation & phytoremediation	0
Baker Beach Disturbed Area 1 (mounded area)	30	8	0	20	4	1	0	0	0	0	20	20	20	20	20	20	0	0	0	0	0	0	0	0	0	0	63	0	no action	0
Wellands Restrtn Area Gmdwater (90% Dilution)																											60	0	no action	0
Nike Facility Magazines/Storage Area	40	6	0	3	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	limited excavation of soil	0
Battery Howe Wagner	40	5	0	8	0	0	0	0	0	0	0	0	0	0	0	0										0	53	0	no action	0
Sewer Lift Station #2	20	6	0	1	10	2	0	0	0	0	10	10	10	10	10	10	1	1	0	0	0	0	0	0	0	0	39	0	limited excavation of soil	0
Lobos Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	31	0	no action	0
Wellands Restoration Area	2	0	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	no action	0
Landfill 2	20	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0										0	25	0	limited excavation of soil	0
East of Mason	2	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	limited excavation of soil	0
Landfill 4	9	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0										0	12	0	no action, institutional controls	0
Bldg. 633	6	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0										0	9	0	no action	0
Bldg. 1351	4	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0										0	7	0	no action	0
Bldg. 1167	3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0										0	6	0	no action	0
FFOGS	1	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0										0	6	0	no action	0
Bldg. 1153	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0										0	5	0	limited excavation of soil	0
Bldg. 680	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0										0	4	0	limited excavation of soil	0
Nike Swale	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	no action	0
Bldg. 662	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0										0	2	0	no action	0
Sewer Lift Station #1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0										0	2	0	no action	0
Baker Beach Disturbed Area 4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	1	0	no action	0
Bldg. 1369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Baker Beach Disturbed Area 1a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Bldg. 302	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Baker Beach Disturbed Area 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Fill Site 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Bldg. 609	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Fill Site 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Bldg. 1245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Bldg. 1388	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0
Bldg. 228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										0	0	0	no action	0

\*0\* indicates 0.5 > HI > 0

\*1\* indicates 1.5 > HI ≥ 0.5

Source: Prepared for RAB community member comments from data in the 1997 Army Remedial Investigation, Main Installation, Presidio of San Francisco

Comment letter example #7

September 1, 1998, group letter to Senators Dianne Feinstein and Barbara Boxer and Representative Nancy Pelosi concerning lead-based paint in soil around non-residential buildings at the Presidio



Community Members  
Presidio of San Francisco Restoration Advisory Board  
Care of Mark Youngkin, Community Co-Chair  
PO Box 640324  
San Francisco, CA 94164

September 1, 1998

Senator Dianne Feinstein  
United States Senate  
331 Hart Senate Office Building  
Washington, D.C. 20510

Senator Barbara Boxer  
United States Senate  
112 Hart Senate Office Building  
Washington, D.C. 20510

Representative Nancy Pelosi  
United States House of Representatives  
2457 Rayburn Building  
Washington, D.C. 20515-0508

**Re: Public Health Risk from Lead in Soil at the Presidio of San Francisco**

Dear Senator Feinstein, Senator Boxer, and Congresswoman Pelosi:

We, the undersigned community members of the Presidio of San Francisco Restoration Advisory Board, are writing to ask for your help in the investigation of lead-based paint in soil around non-residential buildings at the Presidio.

We are concerned about this issue because of the well-documented severe effects of lead on children. Lead poisoning can cause brain damage and neurological impairment; young children, infants and fetuses are particularly susceptible, even at very low levels of exposure. Adult health, wildlife and plants could also be affected. The present inaction on this issue puts Presidio visitors, workers and tenants at risk and could jeopardize the Presidio Trust's mandate to achieve financial self-sufficiency.

The U.S. Department of Defense and the Environmental Protection Agency (along with other federal and state agencies) are currently at an impasse as to who is responsible for investigating lead in soil at non-residential areas of the Presidio. Because of our concerns, we ask for your help in urging the Army to undertake speedy action to evaluate and if necessary remediate lead in soil surrounding the Presidio's non-residential buildings.

## **History of Community Concerns about Lead at the Presidio**

As you may know, the Presidio Restoration Advisory Board (RAB) was established in 1994 to provide a forum for citizen representatives to review Presidio clean-up issues and advise the Army on its plans for remediation of contamination at the Presidio.

The late Sol Levine, a charter member of the RAB who was a lead inspector and a member of the National Lead Abatement Council, first brought the issue of lead contamination in soil around buildings to the board's attention in the summer of 1995. With an extensive background in lead abatement, Mr. Levine knew that lead-based paint on the exterior of buildings could deteriorate into paint chips and dust and contaminate the soil adjacent to Presidio buildings.

As a result of Mr. Levine's request, the Army initiated a program to collect and analyze soil around residential buildings. The project sampled 477 buildings and barracks and 22 playgrounds, analyzing composite samples taken from areas where there was bare earth at these sites. Bare soil around more than 70 buildings contained lead at levels above 400 parts lead per million parts soil (ppm), the standard set by the EPA as the level of concern for children's exposure in such areas. The samples with the largest concentrations had numbers as high as 58,300 ppm; 13,500 ppm; and 8,320 ppm.

These findings appear to warrant an investigation of lead in soil around non-residential buildings. It seems reasonable to assume that non-residential structures could produce lead contamination similar to that associated with residential buildings painted with similar materials and techniques.

## **The Current Controversy**

Because the Army and the federal and state regulatory agencies disagree on who is responsible, no comprehensive sampling for lead based paint contamination has been carried out at non-residential buildings.

We are concerned that this impasse threatens the public health. Residential and non-residential buildings are interspersed throughout the Presidio and both recreational and residential uses are planned for the base. It would therefore be difficult to prevent children (whether tenants or visitors) and domestic pets from playing around non-residential buildings. Contaminated soil also endangers park workers and organizational tenants engaged in gardening and maintenance around non-residential buildings. Some of us have observed that current tenants of non-residential buildings conducting these activities appear to be unaware of the risk of lead contamination.

The Army and Department of Defense maintain that the Army is responsible for lead contamination only around residential buildings and state their policy is to manage it under the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and



Community Development Act of 1992). On the other hand, the U.S. EPA, California EPA and National Park Service contend that the Army is responsible for lead contamination at non-residential buildings under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) because lead pollution is a release of a hazardous substance into the environment.

In 1997, the Department of Defense and U.S. EPA began negotiations in Washington to resolve their differences on this issue. Regrettably, we have now heard that these negotiations concluded without achieving an agreement.

Meanwhile, in view of the Presidio's special status as a national park, local representatives of the Army, the National Park Service, U.S. EPA and California EPA's Department of Toxic Substances Control agreed in 1996 to develop a soil sampling plan to include at least some non-residential areas at the Presidio while "agreeing to disagree" on the statutory authority. Unfortunately, two years later, no progress has occurred on developing the plan because of disagreements between the Army and agency representatives.

We note that clean up of lead-based paint contamination in soil under CERCLA has already occurred in several non-residential areas of the Presidio. The Golden Gate Bridge, Highway and Transportation District removed contaminated soil from the southern end of the bridge and the California Department of Transportation removed contaminated soil around the Doyle Drive Viaduct leading to the bridge. The Army itself removed probable lead-based paint contamination in soil at the Directorate of Engineering and Housing area of the Presidio. Moreover, sampling of soil with field instruments (i.e., X-ray fluorescence spectrometers) is fast and inexpensive.

We also note that state as well as federal regulations apply to the Presidio. The California Department of Toxic Substances Control recently adopted new regulations on the requirements for lead hazard evaluation (Title 17, Article 16, Work Practices in Lead-Related Construction). These regulations apply to public buildings (including non-residential) and require the assessment of risk posed by lead-based paint in soil.

### **Need for Congressional Assistance**

As the only former military base to become a national park, the Presidio is unique. It is expected to have millions of visitors each year as well as workers and tenants who will be exposed to soil in recreational areas. There is now wide agreement among government agencies and other Presidio stakeholders that lead-based paint is a significant potential source of soil contamination at non-residential areas of the Presidio and that the Army is responsible for investigating it.

Members of the Restoration Advisory Board have on many previous occasions expressed concern about lead-based paint contamination in soil at the Presidio. We now

support the position that the Army has a duty to address the clear threat to human health and the environment and should do so as part of the Remedial Investigation and Feasibility Study process for the Main Installation of the Presidio under CERCLA.

We ask you, as our elected federal representatives, to take any steps necessary to resolve this impasse between the Army and federal agencies. The current federal inaction is unacceptable because it fails to protect public health and jeopardizes the reuse of the Presidio. We request that an investigation of lead-based paint contamination at non-residential buildings begin immediately, in the interest of preventing an imminent health hazard to children and the general public.

Sincerely,

*Mark Youngkin, Community Co-Chair, for*

Mark Youngkin, Edward F. Callanan Jr., Julia Cheever, Mathew Fottler, Arlene Gemmill, Molly Hooper, Julian Hultgren, Doug Kern, LeeAnn Lahren, Andrew Lolli, Bruce McKleroy, Jan Monaghan, Howard Nathel, Eleanor Roman, Louis Rosenbaum, Michael Schultz, Ravi Subramanian, Joann Chow Winship, Tracy Wright, Andrew Young, Saul Bloom

Community Members of the Restoration Advisory Board,  
Presidio of San Francisco

cc:

Community Members, Restoration Advisory Board, Presidio of San Francisco  
Romy Fuentes, California Department of Toxic Substances Control  
David Wilkins, Army BRAC Environmental Coordinator, Presidio of San Francisco  
Michael Work, U.S. Environmental Protection Agency  
B.J. Griffin, Presidio General Manager, National Park Service  
Roberta Blank and Brian Ullensvang, National Park Service  
James Meadows and Sharon Reackhof, Presidio Trust  
Joseph Chou, California Regional Water Quality Control Board  
Martha Walters, City of San Francisco  
John Buck, Army Environmental Center  
Roger Henderson and Bruce Handel, Army Corps of Engineers

Comment letter example #8

May 16, 2000, comment letter by RAB community member  
Doug Kern to Presidio Trust concerning Main Installation  
Field Sampling Plan



Doug Kern, Community Member  
Restoration Advisory Board, Presidio of San Francisco  
2532 Lake Street, San Francisco, CA 94121

May 16, 2000

Sharron L. Reackhof, Environmental Remediation Manager  
Presidio Trust, P.O. Box 29052, San Francisco, CA 94129-0052

Subject: Main Installation Field Sampling Plan

Dear Ms. Reackhof,

Thank you for the opportunity to comment on the Main Installation Field Sampling Plan for the Presidio of San Francisco dated April 25, 2000. Community members appreciate that the Presidio Trust is collecting data for Main Installation sites where previous proposed actions by the Army were sometimes based on no actual data.

Please find my comments on specific sites presented below.

### **Section 2.1, Battery Howe Wagner**

At the RAB meeting of March 14, 2000, I showed photos of a potentially contaminated seep oozing from the curbside and adjacent to the former playground at Battery Howe Wagner. No sampling of this contamination site has been proposed in the sampling plan. I include the photos here for your reference and suggest that the sampling plan address the possible contamination shown in the photos of Battery Howe Wagner.







RAB members have previously suggested to the Army that the surface seep flowing throughout the year below Battery Howe Wagner needs to be sampled. The location is known by the Trust and is located generally east of Storey Avenue across from soil boring HWSB15 as indicated on sampling plan Figure 2. Due to documented contamination at Battery Howe Wagner, I recommend that the Trust conduct sampling of this surface water flowing immediately down gradient of the Battery Howe Wagner.

## **Section 2.2, Fill Site 6**

The extent of Fill Site 6 has grown considerably from the Army's original concept where over 20 soil borings were drilled to determine fill characteristics. The revised extent of fill material as indicated by Figure 3 in the sampling plan is only an estimate. The chemical composition of fill material outside of the Army's original site has not been characterized, particularly in the area north of Lincoln, west of Girard, south of Building 1030, and east of Halleck. While I appreciate the Trust proposal to position a groundwater monitoring well at the site and determine the depth of fill, the proposal will not allow decision makers to characterize fill materials or properly select an appropriate remedy at the site, if one is needed.

Historical maps from 1871 show a creek flowing on the surface at this location. A map from 1909 indicates a gentle swale in this area where the creek is confined to a culvert. Later maps show a series of warehouses at this location. Figure 3 from the Sampling Plan shows the anomalous mound now found at the site.



Clearly, materials have been buried in this formerly depressed swale as shown in the photo above. Since the area has been identified in Presidio Trust planning documents as a restoration site, an investigation should be conducted that properly characterizes the nature and extent of possible contaminants at this landfill. Similar investigations have been conducted at Crissy Field and Mountain Lake for the same purpose.

The details of a sampling scheme for this site should include techniques used at other Presidio landfills. The sampling should include at least three trenches (with sampling of materials) to understand landfill contents and sampled soil borings on the order of 6 to 12 locations. The current location of proposed well LF6GW102 should be relocated to the west to test groundwater near the former stream channel as indicated by historical maps. The former stream channel may be the most likely path of contaminant migration. Two additional wells would give a more precise determination of groundwater flow direction.

Without adequate characterization, remedy selection for this portion of Fill Site 6, if needed, will be difficult, if not impossible. A similar scenario has previously existed at Graded Area 9. Lack of characterization hampered decision makers at Graded Area 9 and the Presidio Trust is now investigating the area to adequately determine a remedy. The new sampling plan for Graded Area 9 includes 6 soil borings and 3 groundwater wells at a site roughly the same size as the Fill Site 6 area in question.

### **Section 2.3, Fill Site 1**

The EKI sampling plan states the following needs for additional characterization at Fill Site 1:

- (1) “the results of trenching by the Army are not sufficiently detailed to assess the feasibility and potential costs of completely removing wastes from the Presidio landfills and disposing of the wastes at a permitted, off-site facility, which is also referred to as clean closure.”
- (2) “...to obtain an understanding of the composition of wastes and percentage of recyclable materials...”
- (3) “trenches will also be inspected to evaluate geotechnical issues related to excavation of wastes or installation of an impermeable cover on the fill site.”
- (4) “the findings of trenching at Fill Site 1 will be extrapolated to Landfill 2, Landfill E, Fill Site 5, Landfill 4, and Baker Beach Disturbed Areas 1 and 2.”

The Alternative Remedial Actions document prepared by EKI states for Fill Site 1, Table 4-7, page 3 of 5, and similarly for Landfill 2, Table 4-11, page 1 of 7, “Removal of the waste fill and impacted subsoil and verification groundwater monitoring, i.e., clean closure, is consistent with future land and water resource use. Clean closure would facilitate compliance with ARARs, provide long-term effectiveness and permanence, and provide overall protection of human health and the environment given (1) the presence of municipal waste and possibly asbestos in the waste fill, (2) the presence of steam emanating from the landfill indicating decomposition of waste fill is occurring, and (3) the consistent detection of Cr(VI) and zinc in the groundwater downgradient of the landfill. Clean closure would also likely meet with community acceptance. Given the size of Fill Site 1 and its potential long-term geotechnical instability, clean closure would also provide greater long-term effectiveness, and would be easier and less costly to implement than engineering controls that would allow the waste fill to remain in place.”

The statement in item (1) from the sampling plan directly contradicts those in the Alternative Remedial Actions document by the Trust regarding the feasibility and costs of completely removing waste from Presidio landfills. In fact, Trust representatives have previously stated that it would be feasible and cost-effective to remove landfills at the Presidio.

With respect to item (2) above from the sampling plan, interviews of landfill recycling experts by RAB members suggest that a primary reason that recycling materials from a landfill would not be cost-effective is due to the high cost of chemical sampling of fill materials. Visual inspection is not sufficient to determine whether hazardous waste is present in fill. The Trust does not propose soil sampling in the trenches nor sampling of potentially recyclable materials. Therefore the Trust cannot estimate whether potentially recyclable materials would actually be recyclable and cannot determine a cost savings through recycling materials.

In addition, soil sampling would give direct evidence of whether materials would be characterized as Class 1, 2 or 3 hazardous waste, a significant influence on the cost of excavating materials. However, the Trust does not propose soil sampling and therefore, does not further assess the cost of excavating landfill materials through the proposed trenches.

With respect to item (3) above from the sampling plan, a trench at Fill Site 1 could not reasonably evaluate geotechnical issues at other sites. Comparing trench results from Fill Site 1 with Disturbed Area 1, for example, would be inappropriate due to the radically different site conditions.

With respect to item (4) above from the sampling plan, as with item (3) I advise caution when extrapolating trench findings to other sites. There has been considerable excavation of fill material at other sites around the Presidio. If the Trust wishes to extrapolate trench results from Fill Site 1 to all other landfills, why not use results from previous excavations at the Presidio for extrapolation purposes? Of course, this is an unreasonable proposition, just as is extrapolating results from Fill Site 1 to other sites.

The proposed trenches do not assist with determining the cost of excavating landfill materials, or the cost or feasibility of recycling landfill contents. Digging 4 small 15-foot trenches will not reasonably anticipate excavation difficulties throughout a 2.4 acre site. Trenches provide geotechnical information only where they are dug and cannot be reasonably extrapolated to other sites.

Of the four reasons stated above for digging trenches in Fill Site 1, only part of item (3) is achieved (as indicated by italics in item (3) reproduced here): *“trenches will also be inspected to evaluate geotechnical issues related to excavation of wastes or installation of an impermeable cover on the fill site.”*

Since the National Park Service, the Presidio Trust, the Presidio Restoration Advisory Board and many other Presidio stakeholders with standing have previously understood that Fill Site 1 would be excavated, there is no reason to proceed with trenching activities. Other conditions at the site that may be encountered during excavation such as odor could reasonably be controlled during excavation.

## **Section 2.4 Landfill 4**

The sampling plan states that trenching at Landfill 4 is intended to “investigate whether chemical wastes reportedly deposited in this landfill exist in any significant amounts at this site.” The sampling plan goes on to say that groundwater data suggests that significant amounts of waste do not exist at the site.

The EKI Alternate Remedial Action document states that clean closure [excavation of landfill materials] would provide overall protection of the environment given the *detection of chemical concentrations exceeding hazardous waste criteria.* (Italics mine.)

The statements in the sampling plan directly contradict those in the EKI Alternate Remedial Action document, as well as previous discussions and understandings with stakeholders describing proposals for Landfill 4 at Rob Hill.

The sampling plan statement is also vague with respect to “significant amounts.” “Significant amounts,” an undefined term, cannot be determined by the proposed trenches in any case, simply due to the nature and distribution of hot spots in a landfill. The Trust does not propose soil sampling and therefore cannot definitively determine what kind of chemical wastes may exist or the relative amount of any particular waste.

Without testing, a trench that uncovered a “green lens of corrosive looking material” (as has already been logged during Army trenching activities at the site) would not determine any new information. Sampling would be required to identify the material and determine the cost of disposal. If the Trust wants to determine the extent of chemical wastes and not miss chemical hot spots of a given size, a soil sampling technique using a grid of sample points at several different depths would be required. However, Trust representatives have stated previously that it is not necessary to perform additional sampling to determine whether excavation is feasible or warranted.

The sampling plan states that groundwater data suggests significant amounts of waste do not exist at the site. This statement offers conclusions regarding Landfill 4 well data that belong in the Main Installation Feasibility Study where they must be properly justified with appropriate data. This unsupported conclusion is inappropriate for a sampling plan and should be removed.

The Landfill 4 sampling plan points to designing a land fill cap rather than determining the extent of chemical waste. I recommend that the Trust focus attention on clean closure, the previously stated preferred alternative for the site.

I have no comments on Sections 2.5, 2.6, 2.7 and 2.8.

Thank you very much for your attention and consideration of these comments.

Sincerely,

Doug Kern  
Community Member  
Presidio of San Francisco  
Restoration Advisory Board

cc: RAB Members

+++++

Comment letter example #9

July 10, 2002, group comment letter by RAB community members to Presidio Trust and DTSC on the Draft Remedial Action Plan and Evaluation of Alternatives for Landfill 4 and Fill Site 5



Presidio of San Francisco  
Restoration Advisory Board Community Members  
PO Box 640324  
San Francisco, CA 94164

July 10, 2002

Mr. Craig Cooper  
The Presidio Trust  
P.O. Box 29052  
San Francisco, CA 94129-0052

Mr. Robert Boggs  
California Department of Toxic Substances Control  
700 Heinz Ave., Suite 200  
Berkeley, CA 94710-2721

Re: Comment for Public Record on Draft Remedial Action Plan and Evaluation of  
Alternatives for Landfill 4 and Fill Site 5, June 2002

Dear Messrs. Cooper and Boggs:

Community members of the Presidio Restoration Advisory Board (RAB) welcome this opportunity to comment on the Presidio Trust's Draft Remedial Action Plan and Evaluation of Alternatives for Landfill 4 and Fill Site 5, June 2002. RAB community members have been following the development of plans for the CERCLA cleanup of the Presidio for the past seven years. We commend the efforts of the Presidio Trust, National Park Service and regulatory agencies and hope they will all move forward with an effective and timely cleanup at these sites.

RAB community members endorse the preferred remediation alternative: Alternative 4, Excavation, Recycling and Off-Site Disposal. We believe this alternative is the most appropriate because it permanently removes contaminated source material and eliminates future maintenance and monitoring costs. We also applaud the inclusion of recycling of nonhazardous materials in the remediation plan. Recycling supports the theme of sustainability at the Presidio as a national park and may prove to be a cost-effective strategy for landfill cleanups.

RAB community members are encouraged that the CERCLA cleanup will now move ahead with these two projects and look forward to the continuation of the remediation process as plans are prepared for the remaining sites in this program.

This letter is sent to you pursuant to a motion passed by a unanimous vote of RAB community members at our July 9, 2002, board meeting.

Sincerely yours,

Presidio Restoration Advisory Board Community Members  
Mark Youngkin, Co-Chair

Comment letter example #10

July 8, 2003, group comment letter by RAB community members  
to Presidio Trust on the Revised Feasibility Study for Main  
Installation Sites

RAB Community Members  
c/o Mark Youngkin  
P.O. Box 640324  
San Francisco, CA 94164  
July 8, 2003

Mr. Craig Cooper  
Environmental Department  
The Presidio Trust  
1750 Lincoln Blvd.  
San Francisco, CA 91429

Dear Mr. Cooper,

Community members of the Presidio Restoration Advisory Board congratulate you on the completion of the Revised Feasibility Study for Main Installation Sites. This revision of the Army's 1997 study is an important step in moving forward with the cleanup of the Presidio. RAB community members generally support the conclusions of the study and the proposed remedies.

As you know, we have been studying the document, initially through our working groups and subsequently in discussions with the full RAB community membership at our committee and board meetings. Our purposes for reviewing this document have been:

1. to prepare for participating in public comment on forthcoming Remedial Action Plans;
2. to offer recommendations relevant to the current stage of remediation decisionmaking; and
3. to provide citizen points of view during the development of the details of remedies.

Thank you for making materials from the Feasibility Study available to us and giving us technical assistance with this complex document. We also appreciate your coming to our working group meetings, along with representatives of the National Park Service.

We have now identified some recommendations and issues that we would like to offer for your consideration during the ongoing cleanup process. We offer these comments in the context of our mutual goal of seeking to accomplish the environmental cleanup of the Presidio to the high standards suitable for a national park, accommodating the Presidio's unique ecology and uses.

Our recommendations and suggestions are described in the remainder of the letter below. They are organized according to the four geographic areas studied by the working groups: the Lobos Creek watershed area; the Tennessee Hollow watershed area; the Fort Scott area; and the Coastal Bluffs. A fifth section mentions three other sites

that are not part of the current Feasibility Study but that have been studied by our working groups.

This letter was approved by a unanimous vote of 16 RAB community members at our July 8, 2003 meeting.

#### A. **Lobos Creek Watershed Area**

1. **Mountain Lake:** We support the recommended remedy of dredging and disposing of contaminated sediment. While we understand the challenges you **face** in negotiating with the California Department of Transportation, we would like to reiterate that we think this site is a top priority because of the strong public interest in and public use of the lake area. We hope that a way can be found to clean up the lake and thus complete its restoration soon.
2. **Lobos Creek:** We think the findings of lead and arsenic in the sediment in the area between 17<sup>th</sup> and 18<sup>th</sup> avenues may not have been fully explained. Debris found in the Stream may indicate an as yet unidentified former household waste site. As a source of drinking water and the last free-flowing creek in the Presidio and all of San Francisco, this site is of great public interest. We believe the findings of contamination may warrant further investigation.
3. **Nike Facility:** As we have in the past, we continue to recommend that the large underground missile magazines be removed or at least filled. We believe that leaving them empty and in place would pose a public safety hazard. In addition, we are concerned that standing water at the bottom of the elevator shafts could collect any contamination remaining at the site. We recommend continued sampling of standing water in the magazines until a final disposition of the structures is determined.
4. **Nike Swale:** We commend the Trust's sampling of this previously uninvestigated area and the plan to remove the contaminated soil that has been discovered. There may still be a question as to whether the routes of all the drainage channels leading out of the Nike missile magazines into this ecologically important area have been found and tested. Continued testing of water collecting within the magazines and along the swale would alleviate this concern.
5. **Graded Area 9:** As at the Nike Swale, we commend the additional testing carried out by the Trust to supplement the very limited sampling done by the Army. The supplemental testing appears to be adequate if the area is to be covered with additional sand or soil in conjunction with a plant restoration program. We believe, however, that if the reuse program were to require removal of existing soil instead of a sand or soil cover, additional testing would be needed. The removal of any additional contamination discovered would then be governed by the ongoing remediation process.

## **B. Tennessee Hollow Watershed Area**

- 1 We applaud the dedication to clean closure exhibited in the Revised Feasibility Study.** As mentioned above, RAB community members generally support the conclusions of the Revised Feasibility Study and advise implementation of the preferred remedial alternatives as presented in the document. In particular, we support and wholly endorse the proposal to use the clean closure alternative at landfills in the Tennessee Hollow Watershed, including Fill Site 1, Landfill 2 and Fill Site 6A. We believe that clean closure represents the best long-term solution to mitigating the risks associated with abandoned landfills in a national park.
- 2 Additional, significant cost savings are eminently achievable, given our current experience, so the estimates for clean closure alternatives should be re-visited.** The most recent remediation efforts illustrate that genuine cost savings can be achieved - savings that can be attributed to market conditions, prudent management of contractors and work processes and, we believe, what have been revealed as overly-cautious estimates of what the work would cost. The Feasibility Study may provide estimates that, to be conservative from a cost standpoint, are much higher than actual present-day costs for complete remediation. While we are cognizant of the difficulty in estimating costs on any project, we are convinced that savings are probable given the tangible evidence of the just-completed projects. We recommend that procedures and estimates used in the Revised Feasibility Study be adjusted by applying the positive results the Trust achieved in the Landfill 4 and Fill Site 5 excavations to estimates of costs in Remedial Action Plans for future landfill excavation work at the Presidio.
- 3 To fulfill the dedication to clean closure, the Trust should develop a Soluble Lead Sampling Protocol to forecast more accurately the cost of excavation.** RAB community members are in concurrence with the Trust that early stage and final, pre excavation stage diagnosis to reduce costs through the Waste Extraction Test (WET) is appropriate.
- 4 The public will benefit greatly from additional outreach from the Trust on the alternatives, processes and results of environmental remediation.** Given that the Revised Feasibility Study is released to the public primarily through the RAB's review processes, it is essential that the information made available by the Trust and the RAB be accurate and forthright. We recommend that the Trust use communications associated with upcoming landfill excavations as models for improving the nature and content of its communication with the public at large. Also, we suggest that the Trust analyze and evaluate how the message of landfill removal is being transmitted to the public in light of the successes at Landfill 4 and Fill Site 5.

### C. Fort Scott Area

1. **Re-estimation of Battery Howe Wagner Costs.** We are comfortable with the recommendations for all area sites with one exception: Battery Howe Wagner. Battery Howe Wagner is exceptional in that it is the only remediation site in the Feasibility Study for which the preferred remedy is to leave toxic material in the ground, keep it covered with the existing ground material, and monitor the cover and ground water for ten years.

The Feasibility Study indicates that this remedy is much less expensive than clean closure, \$780,000 compared with \$2,300,000. Our comparison between cost of clean closure and the proposed remedy suggests a different possible result. We substituted \$34/ton, the Trust's current rate for hauling and dumping, for the \$60/ton used in the Feasibility Study estimate. We also feel that engineering costs could be reduced substantially based on expected synergy between concurrent main installation cleanup projects. We suggest that these and other cost savings assumptions could reduce the clean closure estimate significantly.

The Feasibility Study's cost analysis of the proposed monitoring appear to double-count future earnings. These earnings appear to have been previously taken into account by the interest on the unspent money that has been included in the Trust overall available budget. If we take into account inflation at the study's stated value of 2% (and eliminate the double counting) it appears to us that the result is to increase the Trust recommended remedy cost to about \$1,300,000. In view of the ambiguity of cost and admitted value of clean closure, we recommend clean closure be considered at Battery Howe Wagner.

2. **Inaccurate Remedy Name.** We believe the title given to the proposed remedy, "Maintain existing permeable cap," suggests that a permeable cap was previously installed. Since no installation of a cap was performed we believe that the naming is erroneous and potentially misleading to the public.
3. **Carbon Tetrachloride Source and Groundwater Issues.** We are also concerned about the following technical issues. The source of carbon tetrachloride (CT) contamination has not been identified. A trajectory of CT movement, as governed by possible geological pathways, would still allow for the CT source to be in the landfill. We suggest that removing the landfill and still finding the presence of CT is the only sure measure that would support the claim that the source is not in the landfill. In addition, we believe it would be most helpful to include some discussion of possible interaction between the landfill contaminants and the groundwater especially for winter conditions. It would also be helpful to provide some discussion of the lithology of Battery Howe Wagner, i.e. the distances between the bottom of the landfill and the groundwater and how the groundwater moves vertically with seasons.



#### D. Coastal Bluffs

The RAB supports the recommendations of all remedies within the watershed area and offers the following discussion for the Trust's consideration.

1. **Cost Monitoring.** We understand that the projects in this area will be technically and financially challenging. We support a thorough investigation into various options for excavation and disposal in these difficult areas, so that costs do not escalate out of control.
2. **Truck Traffic.** We remain concerned about the truck traffic and potential disturbance associated with these sites and recommend further investigation into non-polluting or low-emission vehicles for hauling and disposal.
3. **Advanced Notification.** Due to extremely high visibility and potential disruption from the projects, we suggest the Trust conduct wide advance notification. Such publicity could include a notice in multiple neighborhood newspapers, informing San Franciscans of the anticipated types of disruptions, duration, and possible alternative routes available to motorists, cyclists and pedestrians.

#### E. Sites Not Included in Feasibility Study

1. **Landfills 8 and 10.** The RAB has studied these sites since 1994 and remains concerned with the contamination issues, the buried cemetery and Lobos Creek as associated with the proximal landfills. We are expecting to comment on documents to be released in the near future that may have some bearing on the future disposition of these sites.
2. **Landfill E.** Given our confidence that additional cost savings will be achieved in the remediation of landfills as shown by recent work, we believe that savings are possible at future landfill excavation sites. We continue to study the disposition of Landfill E due to developing restoration plans calling for renewal of the Tennessee Hollow Watershed in its entirety. The same process we recommend for adjusting the cost estimates on projected landfill excavation sites should be used to more accurately forecast the cost of clean closure at sites where that alternative is not the Trust's preferred remedy. Establishing accurate cost estimates for cleanup alternatives and then controlling actual cleanup costs are keys to fulfilling our shared vision for a completely restored national park. We recommend that the Trust focus on clean closure as the mission of remediation and seek to manage the cleanup process in a way that yields funds that can be applied to other Presidio projects after CERCLA-based and other regulatory obligations are met.

We look forward to continuing to discuss these issues with you.

Sincerely yours,

A handwritten signature in black ink that reads "Mark T. Youngkin". The signature is fluid and cursive, with the first name "Mark" being the most prominent.

Community Members of the  
Presidio Restoration Advisory Board

cc: Brian Ullensvang, National Park Service

Robert Boggs, California Department of Toxic Substances Control

James Ponton, California Regional Water Quality Control Board

Comment letter example #11

February 17, 2004, group letter by RAB community members  
to State Senator Joseph Dunn concerning Mountain Lake

Mark Youngkin  
Community Co-Chair  
Presidio of San Francisco  
Restoration Advisory Board  
P.O. Box 640324  
San Francisco, CA 94164  
(415) 922-6173

February 17, 2004

Senator Joseph Dunn  
California State Senate  
Chairman, Budget Subcommittee on Legislative, Executive,  
Public Safety and General Government  
State Capitol, Room 5019  
Sacramento, CA 95814

Dear Senator Dunn:

Community members of the Presidio of San Francisco Restoration Advisory Board request your participation in securing cooperation and financial assistance from the California Department of Transportation (Caltrans) in the removal of contamination from Mountain Lake in San Francisco.

Mountain Lake is a four-acre natural lake located near the southern boundary of the Presidio, the former Army base that is now national parkland within the Golden Gate National Recreation Area. It is adjacent to a popular San Francisco city park, Mountain Lake Park. The lake is contaminated with lead and other pollutants from State Highway 1, which was built through the western portion of the lake.

We appreciate your ongoing leadership on transportation budget issues. In view of the concerns about contamination raised by neighborhood groups, as well as parents whose children use the playground and open space bordering Mountain Lake, Restoration Advisory Board community

members specifically request a budget subcommittee hearing on this issue.

The Restoration Advisory Board (RAB) was formed in 1994 to oversee U.S. Army cleanup of the Presidio of San Francisco, and has continued this public oversight role after the 1999 transfer of Presidio cleanup responsibility from the Army to the Presidio Trust. It serves as the principal public participation body providing citizen views to decision-makers concerning environmental remediation of the Presidio.

Mountain Lake is the only natural freshwater lake in the Presidio and is one of the few remaining natural lakes on the San Francisco Peninsula. The lake is visited by many species of migratory birds and other wildlife and supports remnants of native wetland vegetation. The park surrounding the lake is extensively used by local residents and visitors for recreational purposes and includes a beach where children play in the water. However, the sediment of the lake contains significant toxic contamination, some of which has been caused directly by the runoff of lead from the adjacent roadway owned by Caltrans.

Discussions between federal and state agencies and Caltrans concerning financial responsibility for the cleanup of Mountain Lake were initiated more than two years ago. In spite of commendable efforts by the Presidio Trust, the National Park Service, the California Department of Toxic Substances Control and the California Regional Water Quality Control Board to motivate Caltrans assistance with the Mountain Lake environmental remediation, Caltrans has yet to take any active role in the remediation. The RAB believes that the lack of active assistance from Caltrans is jeopardizing the cleanup and restoration of Mountain Lake.

As community representatives, we are disturbed by and disappointed with the response of Caltrans to this serious issue. Therefore, we respectfully request a subcommittee hearing to review the Mountain Lake environmental remediation issue and the duty of Caltrans to assist, financially and otherwise, in this effort.

Thank you for your continued leadership on issues such as these. We are available to provide further information at your convenience.

Sincerely,

Mark Youngkin  
Community Co-Chair

Presidio RAB Community Members:

Jerry Anderson, San Rafael  
Sam Berman, San Francisco  
Jan Blum, San Francisco  
John Budroe, San Pablo  
Edward F. Callanan, Jr., San Francisco  
Julia Cheever, San Francisco, *Planning Association for the Richmond*  
Karen Cleek, San Francisco  
George Dies, Palo Alto  
Gloria Gee, San Francisco  
Joel Hermann, San Francisco  
Julian Hultgren, San Francisco  
Doug Kern, San Francisco  
Jack Luikart, San Francisco  
Jan Monaghan, San Francisco  
Peter O'Hara, San Francisco, *Cow Hollow Association*  
Michelle Passero, Mill Valley  
Sara Segal, San Francisco  
David Sutter, San Francisco  
Mary Trigiani, San Francisco  
Tracy Wright, San Francisco  
Gloria Yaros, San Francisco

cc: Senator John Burton, President Pro Tempore, California Senate  
Senator Dick Ackerman, Budget Subcommittee #4  
Senator Denise Ducheny, Budget Subcommittee #4  
Assembly Member Mark Leno  
Jeff Morales, Director, California Department of Transportation  
Edwin F. Lowry, Director, California Department of Toxic Substances Control  
Bruce Wolfe, Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region  
Craig Middleton, Executive Director, Presidio Trust  
Brian O'Neill, Superintendent, Golden Gate National Recreation Area, National Park Service  
Elizabeth Goldstein, General Manager, San Francisco Recreation and Park Department  
Greg Moore, Executive Director, Golden Gate National Parks Conservancy  
Mayor Gavin Newsom, San Francisco  
Supervisor Jake McGoldrick, San Francisco  
Supervisor Michaela Alioto, San Francisco  
Frank Vega, Consultant, Senate Budget Committee



Comment letter example #12

March 8, 2005, group comment letter by RAB community members to Presidio Trust and DTSC on the Draft Remedial Action Plan, Baker Beach Disturbed Areas 1, 1A, 2 and 2A and Twenty-Seven Other Sites

*Restoration Advisory Board*  
Presidio of San Francisco  
c/o Mark Youngkin  
P.O. Box 640324  
San Francisco, CA 94164

March 8, 2005

Craig Cooper  
*Presidio Trust*  
34 Graham Street  
San Francisco, CA 94129-0052

Bob Boggs  
*California Department of Toxic Substances Control*  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710-2721

*Subject: Draft Remedial Action Plan, Baker Beach Disturbed Areas 1, 1A, 2, and 2A and Twenty-Seven Other Sites, Presidio of San Francisco, California*

Dear Mssrs. Cooper and Boggs,

Thank you for the opportunity to review the document titled *Draft Remedial Action Plan, Baker Beach Disturbed Areas 1, 1A, 2, and 2A and Twenty-Seven Other Sites, Presidio of San Francisco, California* commonly called RAP3 by Restoration Advisory Board (RAB) members. RAP3 is a milestone for the restoration of the Presidio and we are pleased to offer our close attention to this matter. We want to take this moment to also express our appreciation for the diligent efforts of the Presidio Trust (Trust) and the Department of Toxic Substances Control (DTSC) to investigate the Presidio thoroughly and determine reasonable remedies.

The Community Members of the RAB are in agreement with the analyses and proposed remedies for most (23 of 31) of the sites discussed in RAP3. We do have comments for the record that we hope will be seriously considered during your continuing deliberations on the proposed remedies.

Community Members submit the following general comments for consideration:

**General Comment:** Community Members have been strongly supportive of clean closure remedies in the past and we remain so today. The following sites are proposed for excavation, offsite disposal and/or 3 years monitoring. Community Members concur with the proposed remedies for these excavation and offsite disposal sites:

Baker Beach Disturbed Area 1  
Baker Beach Disturbed Area 1A  
Baker Beach Disturbed Area 2  
Baker Beach Disturbed Area 2A  
Building 1244 Area  
Building 1351 Area  
Nike Facility  
Nike Swale

Transfer Station  
Building 1167 Area  
Building 662 Area  
Building 669 Area  
Sewer Lift Station No. 1  
Building 633 Firing Range  
Building 680 Area

**General Comment:** The following sites are proposed for ‘No Further Action’. Community Members concur with the proposed remedies for these ‘No Further Action’ sites:

Former Building 611 Area  
Sewer Lift Station No 2  
Building 1245 Area  
Building 1369 Area  
Building 1388 Area  
Former Building 1057 Area  
Former Building 302 Area  
Building 1750 Area

**General Comment:** Community Members do not presently concur with eight (8) proposed remedies in RAP3. We suggest that these sites require further investigation or analysis before considering them as no further action remedies. The following sites need additional discussion:

Building 1151/1153 Area  
Building 1450/1451  
Graded Area 9  
Bldg. 609 Area  
Building 215 Area  
Railroad Tracks  
Coal Storage Area  
Lobos Creek

Community Members of the RAB submit the following specific comments concerning these eight sites.

## BUILDING 1151/1153

**Comment:** The Building 1151/1153 Area is proposed for ‘Land Use Control’ in RAP3. Community Members suggest that Land Use Controls should be carefully considered. These controls may be much more costly than simply removing the waste, particularly at this site. The following questions come to mind and are relevant to implementing Land Use Controls. How will Land Use Controls be managed? Even though RAP 3 suggests that a “Land Use Control Master reference report” will be stored in the Presidio Trust Library, what Trust department will be responsible for the management of this property’s restrictions? Who will update the document? How will future activities at the site be managed, if the land use is altered? It is estimated that the cost for maintaining land use controls at the site is \$30,000, but it is difficult to find a cost for excavating the remaining PCB contaminated soil in the document. Perhaps for a small amount of additional money, it would be better to excavate the site and have it be available for unrestricted use. We also suggest that the estimated cost for Land Use Controls may actually be far greater than \$30,000 given that an implementation plan may be required.

## BUILDING 1450/1451

**Comment:** The Building 1450/1451 area is recommended for ‘No Further Action’ in RAP3. Some contaminant detections appear explained away based on the timing of the sample. We suggest that the data at this site indicates levels of contaminants warranting further analysis prior to a “No Further Action” designation. Perhaps a summary of 2004 groundwater sampling and analysis results for the monitoring wells at the Nike facility would provide valuable data. Please verify that the existing groundwater wells are located down-gradient of the potential source areas described in the text. Please indicate whether the document explains why the ‘concrete fuel pad’ location shown on the figures did not warrant field investigation in this program.

## GRADED AREA 9

**Comment:** Graded Area 9 is recommended for ‘No Further Action’ in RAP 3. However, ground water measurements have been inconclusive, since measurements were not able to collect ground water. Soil samples indicate metals and pesticides. The explanation for the detections at the site could be that the fill imported to the site was not originally clean. The document suggests that ‘greenstone’ rock is contributing background metals to the fill material. We understand that greenstone has not been described at the site and we are uncomfortable with an explanation that has not been verified by field observations. Please verify that greenstone has been observed at the site along with serpentinite. In general we conclude that this site has received sufficient investigation for the proposed land use (restored dune habitat). We concur with the ‘No Further Action’ designation provided further explanation is provided for the origin of the known residual contamination (assuming greenstone is not verifiable at the site). We advise that risk management decisions reflect known site conditions. We would like to understand what procedures, if any, the Trust will implement during reworking of the site for restoration purposes to protect future site workers from residual contamination.

## BUILDING 609 AREA

**Comment:** The Bldg. 609 Area is recommended for ‘No Further Action’ in RAP 3. The pesticide 4,4’-DDT was discovered in two surface soil samples at relatively low concentrations. Apparently, the follow-up data suggests the area of surface contamination is limited and not widespread. The contamination is not likely related to the broken bottle incident responsible for the inclusion of this site in RAP3. We understand that DDT soil contamination at these low levels is common in the Bay Area and typically remedial action is not performed. However, the document discounts the DDT results as ‘unconfirmed’ because adjacent samples did not detect such contamination. We believe a better course of action is to acknowledge the limited contamination as real and make a risk management decision based on the known situation.

We suggest that the overlap between this site and the Commissary study be better explained. Will the pesticide impacted area be excavated as part of the Commissary cleanup or future restoration activities? Is the area presently covered by asphalt or landscaping and what is the exposure risk to public health? The document indicates there is no significant threat to the groundwater resource and the ecological impact is limited. Are these conclusions confirmed by the Commissary groundwater data? We would consider “No Further Action” as recommended in this document provided the known contamination is not explained away and the site specific situation protects public health and the environment.

## BUILDING 215

**Comment:** The Bldg. 215 Area is recommended for ‘No Further Action’ in RAP 3. While significant cleanup action has been performed at the site, the sampling results indicate that residual contamination remains at the site. Reportedly, the California Regional Water Quality Control Board (RWQCB) is prepared to issue a ‘case closure’ status for this former gasoline station case. Apparently, the dissolved chromium in groundwater concern is not considered a significant issue with the RWQCB. We appreciate that the Trust would like to proceed with development at the site. However, we believe that gasoline stations contain numerous environmental features with the potential to create soil contamination. It is likely that unknown ‘hot spots’ of localized contamination could still be encountered during site development activities. The RAB concurs with the ‘No Further Action’ designation provided the Trust implements appropriate site safety and contingency plans to address residual contamination, hot spots, and unknown environmental features encountered during future site grading and utility installation.

## RAILROAD TRACKS & COAL STORAGE AREA

**Comment:** The readers of this report have not received the materials for Railroad Tracks / Coal Storage Area and cannot comment further at this time. Until an analysis of the data

is provided, these areas should not be shown in the document as no further action candidates.

## LOBOS CREEK

**Comment:** Lobos Creek is recommended for ‘No Further Action’ in RAP3. The RAB believes that additional investigation may be needed in Lobos Creek. Our analysis of the data indicates that Lobos Creek has the potential for more contamination than the current analysis suggests. This situation appears similar to the condition at Mountain Lake, where there were indications of contamination and yet, “No Further Action” was the recommended remedy. At Mountain Lake, further investigation revealed significant problems, leading to more investigation and a larger future cleanup. A walk up Lobos Creek reveals debris in the Creek bottom, and therefore, we suggest that contamination from an as yet unidentified source is likely. We strongly suggest that Lobos Creek is not ready for a “No Further Action” determination and that further investigation or analysis is warranted.

**Comment:**

Page 19-15: Sentence starting with “Swimming and wading is not allowed in Lobos Creek...” should read “Swimming and wading is common in Lobos Creek at a popular children’s play area on Baker Beach.” Please verify that any risk management decisions base their conclusions on this known surface water exposure to children.

**Comment:**

Page 19-16: The document implies that surface runoff provides significant sediment-contaminant load to Lobos Creek. To our knowledge, surface runoff has not previously been recognized as a significant sediment input to Lobos Creek. We understand that historic Mountain Lake flows are very rare events at this time and not likely to contribute significant sediment. Sand sloughing off the banks of Lobos Creek appears to provide the majority of sand sediment in the streambed. We are aware that the City of San Francisco reportedly graded sand during the construction of the 22<sup>nd</sup> Avenue sewer crossing (1920-30s) into the streambed between 22<sup>nd</sup> and 23<sup>rd</sup> Avenues. Reportedly, the U.S. Army regularly moved sand from the 24<sup>th</sup> Avenue - Lincoln Boulevard ‘pond’ upstream to the streambed in the vicinity of 23<sup>rd</sup> Avenue. Subsequently, a large quantity of sediment (presumably sand) now occurs in the streambed between 22<sup>nd</sup> and 24<sup>th</sup> Avenues. However, these events are not related to surface water runoff. Please indicate where the specific surface runoff input locations discussed in the document are located.

**Comment:**

One specific outfall, previously not investigated or discussed in the document, is the 22<sup>nd</sup> Avenue overflow outfall discussed below. A storm water overflow pipe outfall is located along the south bank of Lobos Creek at 22<sup>nd</sup> Avenue. This outfall is a separate structure and apparently unrelated to the 22<sup>nd</sup> Avenue sewer crossing. The outfall discharges storm



water from a manhole on 22<sup>nd</sup> Avenue directly to Lobos Creek during storm events (verified in discussions with City of San Francisco engineers). Because the sewer-storm system is a combined system (share a single pipe) along Lake Street, the storm water contains raw sewage and sediment from storm drains. Previous attempts to persuade the City of San Francisco to investigate and disconnect this overflow pipe have been unsuccessful. The outfall storm water has created a persistent scour hole in the streambed. Sediment sampling and core sampling is advised in this area to assess the impact of storm water-sediment input from the City of San Francisco sewer system.

***Comment:***

Page 19-18: Arsenic and lead are occasionally detected in sediment samples from Lobos Creek. We imagine that the metal contaminants are associated with construction debris observed in portions of the streambed. The majority of sediment samples with no contamination were likely collected in dune sand that occurs in the majority of the stream bottom. The RAB advises the collection of additional sediment samples from reaches of the streambed exposing construction debris and household waste. These sample locations could be located within the streambed between 18<sup>th</sup> and 19<sup>th</sup> Avenues and at the 17<sup>th</sup> Avenue Sewer Crossing. In the vicinity of the 17<sup>th</sup> Avenue sewer crossing numerous glass bottles occur in the streambed (apparently dating from the 1970s to 1980s) and disturbed ground graded by the U.S. Army occurs between 16<sup>th</sup> and 17<sup>th</sup> Avenues. Additional sampling sites should collect subsurface samples from below the streambed to ascertain if buried debris, contaminated sediment, or household waste is present. Laboratory analysis of the debris samples for suspect contaminants should be performed. Additional field sampling surveys involving innovative assessment techniques such as a XRF survey for lead contamination should be evaluated. The feasibility and appropriateness of removing construction debris from the streambed should be considered during the design and implementation of the field sampling program.

***Comment:***

At the suggestion of the RAB, the Trust provided for seep water sampling at the ‘orange bank’ between 18<sup>th</sup> and 19<sup>th</sup> Avenues as part of additional Landfill 10 evaluations. Previous field work at these seeps have indicated anoxic water, possible high dissolved metal concentrations (mainly iron and manganese), and elevated total dissolved solid (TDS) concentrations. These characteristics resemble landfill leachate in some aspects. On page 19-18, the document indicates that the seep sample (assumed to be only one sample) contained copper above regulatory agency action levels. The authors conclude that possible sources of copper contamination include a leaking storm sewer or “an unknown source west of Landfill 10.” Much of the land between Landfill 10 and Lobos Creek is disturbed ground with no known investigation. Recent vegetation removal in Lobos Creek has reportedly uncovered another north bank section of ‘red floc’ in the vicinity of 20<sup>th</sup> Avenue. Additional sampling of the ‘orange bank’ seeps and evaluation of possible unknown sources is advised.

***Comment:***

Page 19-18: Chrysene and tetrachlorethyene (PCE) are known contaminants in surface water at the Presidio water treatment plant intake. Apparently, the authors assume these contaminants are originating from groundwater entering the stream from springs along the south bank between 19<sup>th</sup> and 22<sup>nd</sup> Avenues (the main source of Lobos Creek water). The assumed source of groundwater contamination would be former dry cleaners and industrial activities located in the City of San Francisco portion of the groundwater basin. However, to our knowledge, no groundwater sampling for these contaminants has been performed on Lobos Creek springs to verify these assumptions. Additional springs provide water from the 'orange bank', Mountain Lake basin, the south bank between 16<sup>th</sup> and 17<sup>th</sup> Avenues, and miscellaneous pipe inputs. We believe it is technically feasible to sample the various groundwater springs and stream water to verify that this contamination is not originating from sources within the Presidio portion of Lobos Creek.

Again, we thank the Trust and DTSC for their extensive efforts at delivering the document and the Community Members of the RAB largely agree with the findings and conclusions of the document. Please contact me by phone at (415) 922-6173 or by email at [marky@frys.com](mailto:marky@frys.com) if you need additional information or clarification.

This letter is sent to you pursuant to a motion unanimously passed by the 16 RAB Community Members present at our board meeting on March 8, 2005. Thank you for your attention to these comments.

Respectfully Submitted,

Mark Youngkin, Community Co-Chair  
Representing Community Members of the  
Presidio of San Francisco Restoration Advisory Board

Cc: James Ponton, California Regional Water Quality Control Board SF Bay Region  
RAB Members by email

### Comment example #13

February 25, 2008, video of comments by RAB community member Doug Kern at San Francisco Board of Supervisors Land Use Committee hearing  
The testimony can be viewed at these links:

Doug Kern testimony part 1     <https://www.youtube.com/watch?v=fdAw6OaCVZo>

Doug Kern testimony part 2     [https://www.youtube.com/watch?v=5UgC4I\\_tDpk](https://www.youtube.com/watch?v=5UgC4I_tDpk)

Comment letter example #14

January 17, 2009, comment letter from RAB community member  
Doug Kern to DTSC and Presidio Trust on the Draft Remedial  
Action Plan, Landfills 8 and 10

January 17, 2009

Mr. Robert Boggs  
California Department of Toxic Substances Control  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710-2721

Ms. Eileen Fanelli  
Presidio Trust  
P.O. Box 29052  
San Francisco, CA 94129-0052

**Re: Comments, Draft Remedial Action Plan Landfills 8 and 10**

Dear Mr. Boggs and Ms. Fanelli,

I thank the Presidio Trust for the opportunity to provide the following comments on the Draft Remedial Action Plan for Landfills 8 and 10.

**Landfill 10 – Lead and Arsenic Contamination Release to the Environment**

*“All credible evidence indicates that lead is neither essential nor beneficial to living organisms, and that all measured effects are adverse- including those on survival, growth, reproduction, development, behavior, learning and metabolism.”*

U.S. Fish and Wildlife Service (Eisler 1988).

Lead and arsenic contaminated sediment is accumulating below the slope of Landfill 10 in the seeps, springs and streambed of Lobos Creek. There is limited but important evidence suggesting that these hazardous substances may be degrading the waters of the State of California and potentially be in violation of the Porter-Cologne Water Quality Control Act.

The Presidio Trust preferred remedy for the Landfill 10 would allow lead and arsenic contaminated soil to continue to migrate down slope and eventually to Lobos Creek. This preferred alternative would not be protective of human health and the environment. The implementation of the proposed minimal remedy should not be allowed by the State of California Department of Toxic Substances Control or the Regional Water Quality Control Board, particularly in a national park adjacent to and up gradient of a sensitive creek habitat and drinking water source.

The Trust and the State should act aggressively to protect the Lobos Creek habitat and drinking water supply by selecting the more protective and conservative remedy of a complete cover of anchored, clean soil over the Landfill 10 slope area. This remedy would prevent direct erosion of waste materials into the environment and insure a suitable substrate for strong vegetation growth that would, in turn, further anchor the clean soil cover.

## **Risk Exposure Methodology Flawed for Evaluating Preferred Remedy at Landfill 10**

The risk calculation by the Presidio Trust suggests that human health and the environment are not at risk from the material in Landfill 10. For the Landfill 10 slope area, statistical measures seek to evaluate toxic material exposure risk to human and environmental receptors, given the concentrations of hazardous substances detected and assuming specific parameters for contact with the slope itself. Smaller numbers of detections of high concentrations are minimized in this calculation. This would be an appropriate determination if the slope material were fixed in place. But all slopes, even those made of granite, eventually erode.

At the Landfill 10 slope site, waste fill material is situated on a steep slope and is exposed to a never-ending cycle of disturbance by wind, rain and other contributions to erosion. What is not taken into account by the risk calculation for the preferred alternative is the slow, steady erosion of lead and arsenic waste materials from the slope and the eventual concentration of those substances in the down gradient areas, seeps and streambed of Lobos Creek. This fatal flaw of omission in the risk calculation strategy strongly suggests that the selection of the Trust preferred alternative would not be suitable as a final remedy for the Landfill 10 slope area.

### **Evidence of Soil Contamination within Landfill 10**

Lead and arsenic is pervasive throughout the soils of Landfill 10. All Landfill 10 soil samples contain lead (113 detections/113 samples analyzed) and nearly all samples contain arsenic (111 detections/113 samples analyzed)<sup>1</sup>. Many samples on the Landfill 10 slope itself are at or approaching the cleanup levels for lead (160 mg/kg) and arsenic (5.9 mg/kg)<sup>2</sup>. Several samples are above or well above cleanup levels for lead and arsenic.<sup>3</sup>

### **Evidence of Sediment and Surface Water Contamination by Lead and Arsenic Down Gradient of Landfill 10**

There is limited evidence that the waters of the state may be degraded near Landfill 10 in the seeps and headwaters of Lobos Creek. The Army (1990) and the Presidio Trust (2000) conducted limited studies of Lobos Creek sediment and surface water contamination by lead and arsenic. Measurements for total lead and arsenic have been

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<sup>1</sup> Final Feasibility Study for Landfills 8 and 10, (2008), Table 5-3

<sup>2</sup> Final Feasibility Study for Landfills 8 and 10, (2008), Table B-2, (Lead samples of 130, 130, 110, 150, 110, 110 mg/kg) (Arsenic samples of 4.7, 5, 5.1, 4.6, 5.9, 5.2, 6.1, 5.3, 4, 4.5 mg/kg)

<sup>3</sup> Final Feasibility Study for Landfills 8 and 10, (2008), Table B-2, (Lead samples of 530, 400, 930 mg/kg) (Arsenic samples of 7.4, 11, 10, 15, 14 mg/kg)

found above dissolved metals cleanup levels in the surface water of Lobos Creek near Landfill 10.<sup>4</sup>

Of the limited sediment samples collected in Lobos Creek (6) for the combined two studies, lead was found in 3 or 50% of the samples and arsenic was found in 4 or 67% of the samples.<sup>5</sup> Lead and arsenic were found in sediment samples located nearest Landfill 10 (approximately 200 ft.) and in downstream locations.

Total lead and arsenic is prevalent in the seep LF10SP01 located approximately 100 feet from Landfill 10. Total lead and arsenic in surface water exceeds the dissolved lead cleanup values consistently. Lead is detected above these levels in 10 of 13 samples and arsenic is detected near and above these levels in 6 of 13 samples.<sup>6</sup>

### **Evidence of Arsenic Groundwater Contamination Around Landfill 10**

Some of the groundwater monitoring wells around Landfill 10 show persistent contamination by arsenic generally at and above the cleanup level.<sup>7</sup> The Final Feasibility Study for Landfill 8 and 10 (FS) screens out arsenic as a contaminant of concern (COC) by stating the following regarding arsenic contamination in groundwater for Landfill 10:

One arsenic exceedance of the MCL (10 ug/l) was found in well LF10GW204 (11 ug/L in January 2008.) This well is screened in serpentinite. Other arsenic samples from monitoring wells screened in serpentinite have similar arsenic concentrations (8.3 to 9.5 ug/L). Arsenic is not retained as a COC due to the infrequent low-level detections and the lithology specific-relation occurrence in the wells.<sup>8</sup>

Table 1 below provides data from all of the wells in and around Landfill 10, showing the formation the well is screened, the well depth, whether the well shows a characteristic high chromium content of serpentinite and whether arsenic is consistently present in the well. Contrary to the suggestion in the FS that monitoring wells screened in serpentinite have similar arsenic concentrations, not all wells screened in serpentinite (that also show the characteristic high chromium consistent with serpentinite), show an arsenic contamination signature. Instead of being screened out as a COC, arsenic should have been retained as a COC given the consistency of arsenic in particular wells and the nature of Landfill 10 and the area around Landfill 8 as potential sources of arsenic.

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<sup>4</sup> Draft Public Health Service Hospital Record of Decision Amendment, (2000), Table 3-13

<sup>5</sup> Draft Public Health Service Hospital Record of Decision Amendment, (2000), Table 3-13, Table 3-12

<sup>6</sup> First and Second Quarters 2008 Presidio-Wide Quarterly Groundwater Monitoring Program, Table A-15-3

<sup>7</sup> First and Second Quarters 2008 Presidio-Wide Quarterly Groundwater Monitoring Program, Table A-15-3

<sup>8</sup> Final Feasibility Study for Landfills 8 and 10, (2008), Table 5-6



The nature of this arsenic contamination cannot be attributed to serpentinite without further study. Previous studies, including the background metals study, do not indicate that serpentinite contains more arsenic than the other Presidio lithologies.<sup>9</sup>

Arsenic in these wells could be following an unpredictable path in fractured bedrock from an upgradient source, perhaps even Landfill 8, given the history of that area. Arsenic is present consistently in three groundwater wells in this area in a pattern and should not be easily dismissed as occurring from serpentinite.

**Table 1: Arsenic Contamination in Groundwater in and around Landfill 10.**

<b>Well Number</b>	<b>Well screened in formation, lithology</b>	<b>Well Depth</b>	<b>Consistent high chromium in well suggestive of serpentinite</b>	<b>Arsenic consistently present in well, hits in (ug/L), cleanup level is 10 ug/L</b>
GW01	serpentinite		yes	No
GW02			no	No
GW03			no	No
GW100	serpentinite	55 ft	no	No, yes (total) 8.7, 10, 13
201	serpentinite	54 ft	yes	Yes, 8.4, 9, 8.7, 9.5
202	serpentinite	40 ft	yes	<b>No</b>
203	native dune sand, silty clay with sand, Colma	19 ft	na	na
204	serpentinite	40 ft	yes	1 hit of 4 samples, 11
205	native dune sand, sand with gravel	6 ft	na	na
206	serpentinite	25 ft	yes	<b>No</b>
207	native dune sand silty clay with sand, Colma	10 ft	no	No
208	native sand, silty clay with sand, Colma	55 ft	no	No
209	serpentinite	50 ft	yes	Yes, 9.4, 8.9, 9.9, 9.4 9.2, 10.9, 8.4, 8.26
210	sand, Colma	27 ft	No	No
211	Sand, Colma	35 ft	No	No
212	clayey sand, Colma	39 ft	No	No

<sup>9</sup> Development of Presidio-Wide Cleanup Levels For Soil, Sediment, Groundwater, Surface Water, (2002), pg. 6-11, Table 6-1, Table 6-2, Table 6-3, Table 6-4, Table 6-5

## Evidence of Mercury Groundwater Contamination at Landfill 10

Table 2 below shows mercury contamination in groundwater from well LF10GW03 approximately 10 feet from Landfill 10. The cleanup level for mercury is 0.012 ug/L. The values in the table represent exceedences from *17 to 125 times* the cleanup standard for mercury. Of 28 samples taken since 1994, 15 samples have detected mercury above the cleanup level (54%). The other data may likely have mercury present above cleanup levels, but below the laboratory detection limit. These data show a clear and persistent release to the groundwater environment by mercury.

Table 2: Mercury Sample Analyses for well LF10GW03

Date	Mercury
6/10/08	<b>0.24</b>
3/11/08	<0.2
1/7/08	<0.2
2/27/07	<0.2
3/17/06	<0.2
3/16/06	<0.2
3/18/04	<0.2
8/20/03	<b>0.2</b>
6/10/03	<b>0.41</b>
3/19/03	<b>0.48</b>
12/6/02	<b>0.35</b>
9/4/02	<b>0.72</b>
6/5/02	<b>0.56</b>
3/12/02	<b>0.54</b>
11/30/01	<0.2
8/31/01	<b>0.21</b>
5/17/01	<b>0.33</b>
2/18/97	<b>0.3</b>
12/12/96	<0.2
9/4/96	<b>0.23</b>
6/6/96	<0.2
3/21/96	<b>0.54</b>
12/1/95	<b>0.3</b>
9/26/95	<0.2
6/9/95	<b>1.5</b>
3/16/95	<0.2
12/13/94	<0.2
9/9/94	<0.2

## **Landfill 10 Analysis**

Landfill 10 contains lead and arsenic in soil. These contaminants are being released from Landfill 10 to the environment. Groundwater contaminated with arsenic is found in several wells around Landfill 10. Limited samples of sediment and surface water from Lobos Creek seeps near Landfill 10 show evidence of contamination by lead and arsenic. The risk analysis conducted for Landfill 10 does not account for migration and concentration of contaminants away from the site in a drinking water source.

While interpretation of environmental samples is not an exact science, we should err on the side of being conservative and protective of human health and the environment. At the Commissary Site, dozens of samples were interpreted to indicate many distinct petroleum releases. It turned out that these subsurface petroleum plumes turned out to be coal, not petroleum. Since the coal was not mobile or harmful in the environment, unlike petroleum, it was left in place. Costs were minimized. Alternatively, at Mountain Lake, the site was prematurely declared clean – a “no further action” site -- due to low levels of contaminants from minimal sampling. Later, detailed studies by outside parties inadvertently revealed that there was indeed significant lead contamination of the lake sediments. Since the true nature of the site was not understood, the costs were not budgeted and an important cleanup has been delayed for many years.

In the case of Lobos Creek, a similar situation may exist to the one at Mountain Lake. This is a site directly adjacent to and down gradient of Landfill 10 that is known to contain contaminants. Minimal Lobos Creek sampling shows evidence of lead and arsenic contamination, the same contaminants found at Landfill 10. Other hazardous substances, not tested for in Lobos Creek, but prevalent in Landfill 10 such as PAHs, may also be accumulating in the seeps and streambed of Lobos Creek. We have not investigated the broken outfall of the Mountain Lake overflow pipe. This pipe may have leaked contamination for years near the toe of Landfill 10, and it may be an ongoing conduit of contaminants to Lobos Creek. The results of a Lobos Creek investigation would be directly relevant to the remedy decision at Landfill 10 since Lobos Creek is the receiving waters for contamination from Landfill 10. Yet, the investigation of these waters has been shifted to a low priority, despite the importance Lobos Creek as a sensitive habitat and drinking water supply, limiting the evidence that could better evaluate the potential hazard.

## **Landfill 10 – Conclusion -- Choose a More Conservative Remedy**

Lead and arsenic contaminants are pervasive in the Landfill 10 area. Lead and arsenic are found in the soil, the groundwater, surface water and in sediments. Unless covered, this material will continue to be released into the environment. The slope of Landfill 10 should be completely covered with sufficient, anchored clean soil so that no waste fill material is exposed. Covering the slope will at least insure that the Landfill 10 slope area is not an ongoing source of contamination to Lobos Creek, a sensitive habitat area, a drinking water supply and water of the State of California. When Lobos Creek is

investigated, the likely future cleanup at that site will be protected against additional contamination by ongoing erosion of pollutants from the face of Landfill 10.

### **Landfill 8 – A Presidio Landfill That Should Be Removed**

Landfill 8 contains a variety of materials including construction debris, vegetative debris and municipal waste. Contaminants include a variety of metals, dieldrin (a pesticide) and PAHs.

Whenever landfills are removed we discover contamination that we are happy to have removed from the Presidio environment. We know we have left the national park unimpaired for future generations.

Landfill 8 appears to contain similar materials to other Presidio landfills, but seems to have no impact to groundwater. The possible explanation for the lack of expected groundwater impacts is that the Colma Formation is locally controlling groundwater away from the existing groundwater well network.

### **Analysis of Landfill 8 Colma Formation and Potential Control on Groundwater Flow**

The Colma Formation exists within 3 feet of the ground surface to the north and west of Landfill 8 in the recent remediation excavation for the Nike Swale.<sup>10</sup> Water does not readily infiltrate this Colma surface and forms the basis for the wetlands at the Nike Swale. The 1870 topographic map shows a depression in the area of Landfill 8. It was in this depression that the Merchant Mariners Cemetery was established placing graves 6 feet below the 1870 surface from 1881-1912.<sup>11</sup>

While there is no subsurface data for confirmation, it is likely that an east-west Colma Ridge exists to the south of Landfill 8, based on the 1870 topographic map. A depression in the Colma Formation would then likely underlie the 1870 topographic depression located to the north of the east west Colma ridge. Groundwater would then run down gradient from east to west along the depressed Colma surface and not reach up-gradient to the screened interval of well LF8GW04. Groundwater from Landfill 8 would exit the site to the west, where there is no well control. The Colma-controlled groundwater surface would not be sampled by the groundwater wells established at Landfill 8. No contamination would be detected because the groundwater is diverted away from existing wells along the Colma surface.

See Figure 1 below.

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<sup>10</sup> Personal Observation, Doug Kern, Winter 2008

<sup>11</sup> Marine Hospital Cemetery, Presidio of San Francisco, (2006), Jennifer McCann, Presidio Archeology Center

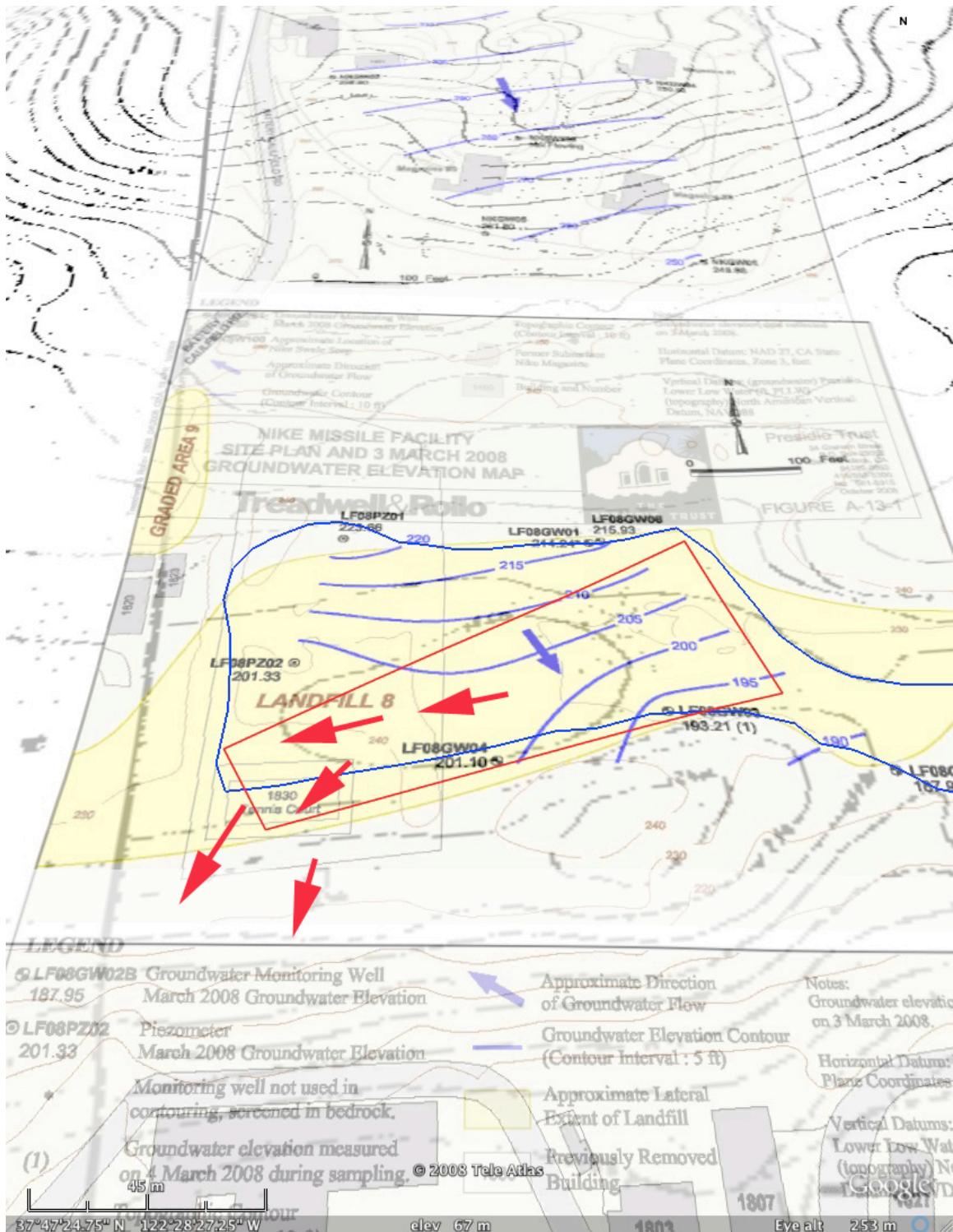


Figure 1: Landfill 8 (blue outline), Merchant Mariner Cemetery (red outline), 1870 topographic map showing depression where cemetery was placed, red arrows indicate groundwater path directed along the axis of the 1870 topographic depression avoiding detection by groundwater well network. No groundwater well control exists in the area of the red arrows.

As Table 3 below demonstrates there is a considerable thickness of Colma Formation between the top of the Colma and the tops of most of the groundwater well screened intervals at Landfill 8, except in the case of GW04 where water passing through most of the fill material is diverted to the west without being sampled at GW04.

**Table 3: Groundwater Well Data for Landfill 8**

<b>Well ID</b>	<b>Well screened in formation, lithology</b>	<b>Well Depth (ft)</b>	<b>Screen Interval</b>	<b>Top of Colma</b>	<b>Distance between top of Colma and top of screening interval</b>	<b>Notes:</b>
GW01	Identified as Graywache sandstone and weathered Franciscan	44.5	35-44	15	20	
GW02 B	serpentinite	56.5	49-59	19	30	
GW03	Above serpentinite in Colma sandstone	55	33-43	19	14	
GW04	Above serpentinite in dune sand and Colma sandstone	55	33-43	35	-2	
GW06	Above serpentinite in Colma sandstone	32	18.5-23.5	6	12	
PZ01	Above serpentinite in Colma sandstone	30	12-22	6.5	5.5	Piezometer installed but not sampled.
PZ02	Above serpentinite in Colma sandstone	39	17.5-37.5	13.5	4	Piezometer installed but not sampled.

## **Landfill 8 -- Deficiencies in Data Analysis**

The groundwater regime, subsurface geology and potential contamination near the southwest corner of Landfill 8 are not confirmed through sufficient well control. The nature of the 1870 topographic map suggests a complex subsurface. Contamination would be expected from the Landfill 8 area, given the deposition history at the site. Additional groundwater wells should be installed based on the 1870 topographic map. The east-west ridge to the south of Landfill 8 should be sampled to determine the depth to the Colma Formation and possible diversion of groundwater to the west. The Colma formation thickness should be mapped and its affect on groundwater flow should be investigated.

Without this confirmation study of the Colma Formation and its effect on groundwater flow, there remains a significant risk to the Lobos Creek groundwater basin from contaminants in Landfill 8.

## **Landfill 8 – Human Remains Do Not Occur Within the Waste**

Contrary to an assertion in the DTSC Initial Study contained within the Landfill 8 and 10 RAP, there is no evidence of any human remains having been found within the waste fill.<sup>12</sup> It is true that human remains have been located below the waste debris, but again, a detailed review of over 40 test pit logs for the Landfill 8 site indicates that there is no evidence that human remains have been located in the waste debris. As such, excavation of landfill materials would likely be accomplished without the disturbance of any human remains at all.

## **Landfill 8 -- Conclusion**

Landfill 8 is similar to other landfills at the Presidio and it should be completely excavated. Clean closure is the most protective and permanent alternative for the environment. The clean closure remedy is also the most effective because it would avoid long-term maintenance of the proposed sand cover, it would avoid the possibility of problems with a cover over time, and it would avoid the need for land use restrictions in a habitat restoration area. Removal of landfill waste is the most appropriate cleanup remedy for a national park where resources should be protected unimpaired for future generations.

High arsenic and mercury concentrations found in groundwater wells at Landfill 10 are potentially related to Landfill 8. Landfill 8 may be at least a potential contributing source of this contamination, representing an ongoing threat to Lobos Creek. Evidence from the 1870 topographic map suggests that Landfill 8 groundwater monitoring wells are not necessarily picking up contamination until that contamination reaches wells in the

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<sup>12</sup> Initial Study, pg. 26 “Trenching encountered some limited evidence of human remains below and within the waste debris.”



vicinity of Landfill 10. The groundwater at Landfill 8 should be more thoroughly investigated because of its proximity to Lobos Creek and Mountain Lake.

### **Summary**

I strongly urge the Presidio Trust to reconsider their preferred alternatives for Landfills 8 and 10 and select more protective and conservative alternatives.

Thank you for consideration of these comments

Sincerely,

Doug Kern

cc: Speaker Nancy Pelosi  
Supervisor Michela Alioto-Pier  
Supervisor Eric Mar  
Supervisor David Chui, Board President  
Brian O'Neill, Superintendent of the GGNRA  
Craig Middleton, Executive Director, Presidio Trust  
Curtis Scott, San Francisco Bay Regional Water Quality Control Board  
Dan Murphy, Department of Toxic Substances Control

Comment letter example #15

April 17, 2010, group comment letter by RAB community members to DTSC on the Draft Remedial Action Plan (RAP) for Fill Site 1, Landfill 2 and El Polin Spring

Mark Youngkin  
Community Co-Chair  
Presidio of San Francisco  
Restoration Advisory Board  
3301 Clay St Apt 105  
San Francisco, CA 94118

April 17, 2010

Ms. Remedios Sunga  
California Department of Toxic Substances Control  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710-2721

Subject: *Comments on Presidio of San Francisco Draft Remedial Action Plan (RAP) for Fill Site 1, Landfill 2 and El Polin Spring, March 2010*

Dear Ms. Sunga,

Thank you for the opportunity to review the subject document. Community members of the Presidio Restoration Advisory Board have spent a number of years following plans for these sites and we wish to see both Fill Site 1 and Landfill 2 remediated so that natural and cultural resources are protected to the maximum extent possible within reasonable expenditures from the finite cleanup budget.

Community members of the Presidio Restoration Advisory Board appreciate and support the Trust proposals for clean closure of Fill Site 1 and Landfill 2, but we believe the proposed plans should be strengthened. We provide here several relevant comments on the draft document.

### **Site History**

Section 5.1.2 discusses the site history of Landfill 2. This paragraph discusses the description in the 1987 Enhanced PA concerning a brick furnace / chimney in the southwest portion of the landfill. According to this section "Following vegetation clearance in 2009, the brick chimney was uncovered but the furnace was not uncovered or identified." Our inspection of the brick structure on Landfill 2 indicates this feature is easily identifiable as a small incinerator with brick chimney, trash grate, and troughs for removing the ash. There is no obvious field evidence for a furnace. It is our expectation that ash is present around this incinerator and down-wind of it. We recommend that the document and figures be revised to denote the location of the incinerator and prevailing wind direction, as this information could be useful in determining the distribution of potential contaminants associated with incineration.

### **Selenium**

The cleanup standard for selenium should not be weakened from 0.5 mg/kg to 2.0 mg/kg, as proposed in the draft document. We believe that there is no good reason for a less strict standard, particularly in an area immediately adjacent to a children's play area (Julius Kahn playground) and also in an area destined to be natural habitat with endangered species nearby.

Additionally, the draft FS1 LF2 RAP states "the Trust is proposing a site-specific cleanup level of 2.0 mg/kg for selenium which corresponds to the high toxicity benchmark value for the American Robin of 2 mg/kg (EKI, 2002; Revised 2006), because concentrations of selenium below 2 mg/kg are not considered to contribute significant risk to human or ecological receptors." Table 5-15 of the Presidio Cleanup Level Document (PCLD) lists the range of wildlife Preliminary Remediation Goals (PRGs)

Letter approved by a 12-1 vote of RAB Community members on April 13, 2010

for selenium as 0.2 - 2 mg/kg. The proposed cleanup level of 2 is at the high end of the range and should be fully justified in the RAP. It is our understanding that such an approach would not normally be considered ecologically health protective. The statement "concentrations of selenium below 2 mg/kg are not considered to contribute significant risk to human or ecological receptors" is not justified with respect to ecological receptors on the basis of any information contained in the PCLD or the RAP.

Selenium is highly mobile in the environment, both in the air when materials are burned in an incinerator and in water when rain percolates and infiltrates into landfill materials over several decades. Such is the case at Landfill 2 where an incinerator remains to this day and significant amounts of ash appear to be buried in the landfill. The presence of an incinerator easily explains how selenium has spread up-gradient of Landfill 2 and downwind to the Fill Site 1 area. The mobility of selenium in water can also explain how selenium is now found in serpentinite bedrock below Landfill 2. The toxic material has had many decades to infiltrate beneath the landfill site. Therefore, selenium in and around Landfill 2 and Fill Site 1 strongly appears to be as a direct result of Army disposal activities and practices.

It should also be noted that the Presidio Cleanup Level Document (PCLD) lists the selenium background level for most Presidio lithologies as 0.5 mg/kg. This would make it unlikely that the selenium sample concentrations > 0.5 mg/kg were due to naturally occurring selenium. It is our understanding that this is especially true in light of the fact that the selenium background level listed in the PCLD is actually the detection limit of the analytical method used to analyze soil samples. None of the Presidio serpentinite soil samples used to develop the PCLD contained detectable selenium, so the true selenium concentration of the soil samples could have been much lower than what was reported as "soil levels" in the PCLD. This point should be clarified in the draft document.

We recommend that all references within the RAP and Field Data Report for Fill Site 1 and Landfill 2 that suggest selenium is naturally occurring within serpentinite be removed. Many of these references have been removed and we appreciate that effort. We request that DTSC include a letter with the RAP specifically stating that selenium is not naturally occurring to a specified level within serpentinite at the Presidio. In order to help resolve the selenium issue, it would be useful to understand the difference in the cleanup cost between an alternative that utilized the old cleanup standard of 0.5 mg/kg and the proposed, relaxed standard of 2.0 mg/kg.

## **Excavation of Landfill Contents**

RAB community members believe that for clean closure to be effective, all waste and contamination should be removed. We have repeatedly requested that the excavation of these landfills remove all waste and contamination associated with the site. It is troubling that the RAP includes language that suggests some contamination is not associated with Army disposal activities or practices. It is unclear from the text how the Trust has made these distinctions. However, we believe that it is in the best interest of the public, the nearby play areas and the nearby endangered species that all contamination and waste is removed. We further argue that the excavation lines drawn in the RAP are arbitrary. Excavating only to these lines will leave a ring of contamination surrounding the site and this is not a desirable outcome in a national park.

If fill materials are to be left behind, particularly at Fill Site 1, we request that these materials be sampled not only at the new surface, but also at depth, in a three dimensional pattern. It is our opinion that this will insure that contamination is not left behind inadvertently. The draft document reveals limited sampling at depth immediately to the west of Fill Site 1. Our examination of boring logs

suggests that there may be additional fill materials to the west, which may increase the total volume of waste excavated at Fill Site 1.

## **Groundwater & Seep Sampling**

The majority of figures in the draft document show the location of water courses and surface seeps in erroneous positions. Apparently, this is an on-going GIS registration problem. Figure 6-1 titled *Seep and Groundwater Monitoring Well Locations at El Polin Spring, Fill Site 1, Landfill 2, and El Polin Spring, Remedial Action Plan, Presidio of San Francisco, California* shows the seep sampling locations in erroneous positions, shows only a portion of the historic seep locations, and shows no seep sampling locations at Fill Site 1. We recommend that this figure be revised to show the correct seep sampling locations, include all historic seep sampling locations, and particularly include the seep sampling locations originating from Fill Site 1 where fill material is proposed to be left at the site.

We recommend that the groundwater and seeps should be monitored for three years following the excavation of landfill materials. The sampling frequency each year may decrease from quarterly, to bi-annually to annually each year. This has been the standard for groundwater monitoring at landfills, post-excavation, at the Presidio.

The document indicates that water in the seep area between El Polin Spring and Landfill 2 appears to be associated with groundwater seepage from the base of the Dune Sand. The high coliform bacteria levels historically measured in the seep water suggest leaking sewer lines upslope of the landfill are contaminating the seep water. It is our opinion that the document should include reference to the elevated coliform bacteria in surface water should appropriate health and safety measures be required to protect construction workers, volunteers, and future water quality monitoring personnel.

## **Post Excavation Concerns**

Given the disastrous results of erosion problems at Landfills 8 and 10, we strongly recommend that the Department request and oversee a detailed erosion control plan at Fill Site 1 and Landfill 2, prior to excavation. A large area of bare soil will be exposed and it is our opinion that erosion will be likely if the site is not carefully protected. We understand that more stringent storm water runoff protection will be required for the general construction permit as of July 2010 by the California Water Quality Control Board. If not already meeting this new standard, we advise that the project be administered under the new July 2010 guidelines. We believe that a creek will likely be exposed once the fill materials are removed, potentially adding to erosion issues. We therefore strongly suggest that the Department of Toxic Substances Control, in coordination with the Regional Water Quality Control Board, request and receive a restoration plan for the new creek alignment prior to commencement of excavation activities.

We appreciate the time and effort you have expended on this document and for meeting with us to discuss our concerns. We recognize that many of our previously stated concerns have been incorporated into this draft already and we appreciate your attention.

Please contact me by phone at (415) 922-6173 or by email at [my@markyoungkin.com](mailto:my@markyoungkin.com) if you need additional information or clarification. Thank you for your continued attention to our comments.

Sincerely,



Mark Youngkin  
Community Co-Chair

Comment letter example #16

April 13, 2011, group comment letter by RAB community members to DTSC on the Draft Feasibility Study/Remedial Action Plan for Landfill E

April 13, 2011

Ms. Virginia Lasky  
Department of Toxic Substances Control  
700 Heinz Avenue  
Berkeley, CA 94710-2721

RE: Draft Feasibility Study/Remedial Action Plan (FS/RAP) for Landfill E

Dear Ms. Lasky:

Thank you very much for your presentation at the April 7 public meeting for Landfill E. The presentation was quite informative for the RAB members who were there.

As community members of the RAB, we are concerned that the proposed remedy is not the most effective option, is not supportive of the reuse goals of the Presidio as a national park, and has the potential to fail, causing environmental damage and requiring repair costs, over time. Our concerns are discussed below.

We learned for the first time at the April 7 meeting that the Presidio Trust expects to import 1,800 truckloads of fill material in order to complete their proposed alternative of capping Landfill E, a 20% increase over our own estimate of 1,500 truckloads. We question the advisability of importing large amounts of non-native fill materials into the Presidio, particularly when that material may contain contamination or invasive species and moreover, would be inconsistent with the Presidio's stated goal of complete restoration of the Tennessee Hollow watershed. The relevant FS/RAP text that describes the cover system is on Page 29:

The new soil cover would consist of a minimum of two feet of imported clean fill soil, or equivalent, which would be placed in lifts, compacted, and final graded to provide adequate surface water drainage and minimize erosion of the cover. While there would be no specified permeability criteria for the imported soil, preference would be given to fill soil that has a finer grain-size distribution that includes a higher percentage of silt and clay.

Recontamination of remediation sites has occurred more than once at the Presidio, through the reuse of contaminated materials. The Trust documentation gives no assurances that the material they intend to use for the cover system will be tested and completely free of contaminants and invasive weeds. We would like to understand what the Trust means by "clean," a term that can mean different things in the environmental business. Does this mean it could contain contamination, but just under regulatory limits? How will the soil be tested? Will the test results be made public prior to importation of fill? Will statistical methods be used to average out positive indications of contamination against truly contamination-free material in the fill soil? Who will certify that the material is clean? We



also question what is meant by the “equivalent” of clean fill soil. What is the equivalent of clean fill soil, what would be its characteristics and under what circumstances would an alternative, “equivalent” material be used? With permeability of the fill soil left unspecified, it appears that we should assume that water would percolate through this system, since the cover system, including the soil, is not designed to prevent infiltration. If so, we ask our regulatory agencies to completely investigate the potential consequences of a remedy that allows water to infiltrate a site containing high levels of hazardous materials.

Community members of the Presidio Restoration Advisory Board strongly support Alternative 2, Complete Removal and Monitoring, as the most appropriate remedy for Landfill E. This remedy is consistent with our April 1997 Resolution, [attached] *“Excavation, Recycling and Off-site Consolidation of Presidio Landfills, Fill Sites and Disturbed Areas,”* and with a couple of exceptions, has been the Trust’s selected remedy for almost all of the landfills at the Presidio. As stated in the Resolution, complete excavation is the best remedy because it would allow the Presidio to effect (future) reuse that would be necessary for a national park. We believe that containment of waste is inconsistent with the goals and reuse scenarios of the park, in this case a riparian corridor and a recreational field.

RAB members’ observations of the work-in-progress for a permeable soil cap at Landfill E do not instill confidence that the proposed remedy would be effective. Our review of the FS/RAP has led to further concerns about the proposed remedy that are enumerated below.

1. The existing waste at Landfill E was dumped and burned on site in a natural ravine with water flowing from a spring or intermittent creek at its base. Therefore, it is clear that waste materials at Landfill E are not contained in an appropriately designed waste area that isolates the contamination from the environment. Fresh water from the spring or intermittent stream still comes into contact with waste, providing ongoing pollution, impacts or impairment to the environment.
2. The proposed remedy of a permeable soil cap is inadequate to protect groundwater. Infiltrating precipitation will continue to flow through waste materials, and possibly continue to impair the groundwater for the foreseeable future, limiting the opportunity for a complete restoration of the watershed.

As restoring the Tennessee Hollow watershed is a stated goal of the Presidio Trust, we believe the permeable soil cap is inconsistent with that restoration goal. If a cap were to be selected, we strongly urge the Department of Toxic Substances Control to select a cap with an impermeable barrier to limit exposure of hazardous materials to groundwater.

In addition, we would like to reiterate our concerns and reservations about having a drainage swale, or ditch, alongside the landfill as described on Page 30 of the FS/RAP. At various informal meetings, we have repeatedly questioned the appropriateness of water

flowing adjacent to a hazardous waste landfill site. Yet, the draft FS/RAP document shows such a conceptual feature in Figure 6-1. The document provides no details regarding a conceptual feature that is an essential element to the effectiveness of the remedy and in our opinion has a reasonable probability to fail over time, potentially causing considerable damage and expense.

Over the past few years, our observations in the Presidio have indicated that water features may be quickly overgrown with vegetation. Such a drainage ditch at Landfill E, once clogged and filled with vegetation and debris from upstream in the watershed, could divert water and tons of debris directly onto the playing field during a major El Nino storm event. Such events have already occurred at Landfill E and have required expensive repairs.

Water could also work through the base of the ditch and into the fill materials after several years. In that case, the proposed remedy will be no better than what is currently at the site where each winter, rain backs up behind the landfill and percolates through the landfill's hazardous waste. It is our view that over time, a two-foot soil cover will provide little or no barrier to the waste below. The remedies and engineering we have recently seen at certain other Presidio landfills (e.g., Landfills 8, 10 and 2) show that water is a persistent force on man-made structures, with the potential for breaking them down over time.

We recognize that complete excavation will cost more, but we believe that it is a small price considering the central location of Landfill E in a national park with use potential by thousands of people in the coming years. This remedy would not bar the installation of a recreational field because a field can still be located at the site. In addition, the restoration of the actual riparian corridor will be much more effective. Because of these concerns, we suggest that the most effective remedy in the long term will be complete excavation and we urge decision makers to identify additional funding, so the project may be carried out correctly the first time.

Community members of the Restoration Advisory Board appreciate the opportunity to comment on the Landfill E FS/RAP.

Thank you,

Mark Youngkin, Co-Chair  
Community Members of the  
Presidio Restoration Advisory Board

**Presidio of San Francisco  
Restoration Advisory Board  
Resolution**

*Excavation, Recycling and Off-site Consolidation of  
Presidio Landfills, Fill Sites and Disturbed Areas. April 1997*

Whereas, the Presidio's future reuse and status as a National Park must be carefully protected so that it meets its fiscal goals of self-sufficiency; and

Whereas, the containment of waste at the Presidio of San Francisco may be inconsistent with the vision, goals and reuse scenarios of the Park; and

Whereas, institutional controls at the landfills, fill sites and disturbed areas would limit reuse options; and

Whereas, the location of Presidio landfills, fill sites and disturbed areas in ravines, valleys and low-lying areas where fresh water is known to flow yields ongoing pollution to the environment; and

Whereas, the landfills, fill sites and disturbed areas at the Presidio contain a variety of recyclable materials and that if those materials were recycled, when appropriate and feasible, the costs of excavation and offsite disposal would be substantially reduced; and

Whereas, excavation and off-site disposal of landfill, fill site and disturbed area materials has been routinely dismissed as prohibitively expensive without sufficient written estimates, while expenditure estimates of containing wastes on site have not fully considered all the costs of long-term monitoring and maintenance; and

Whereas, remedies have been selected for certain Presidio landfill sites without community acceptance; now, therefore

Be it resolved that the Presidio of San Francisco Restoration Advisory Board fully endorses the April 1997, Presidio Landfill Closure Principles; and

Be it further resolved that, with few exceptions, and until proven otherwise, the Presidio landfills, fill sites and disturbed areas should be excavated, fill materials recycled where appropriate, and remaining materials and hazardous waste consolidated at modern, appropriately designed and monitored off-site disposal facilities.

Comment letter example #17

April 20, 2011, comment letter by RAB community member Doug Kern to DTSC on the Draft Feasibility Study/Remedial Action Plan for Landfill E and on Field Sampling Report and Remedial Investigation Summary, Landfill E and Barnard Avenue Protected Range

Doug Kern  
3229A Clement Street  
San Francisco, CA 94121

April 20, 2011

Ms. Virginia Lasky  
Department of Toxic Substances Control (DTSC)  
700 Heinz Avenue  
Berkeley, CA 94710-2721

RE: (1) Draft Feasibility Study/Remedial Action Plan (FS/RAP) for Landfill E  
(2) Field Sampling Report and Remedial Investigation Summary,  
Landfill E and Barnard Avenue Protected Range, Presidio of San  
Francisco, California, March 11, 2011

Dear Ms. Lasky:

Thank you for the opportunity to provide you with these comments on the Landfill E FS/RAP. These comments also refer to the Field Sampling Report (FSR) for Landfill E, dated March 11, 2011, released and received at approximately the same time as the Landfill E FS/RAP. The time allowed to review these documents has been relatively short and so, I appreciate your patience with my comments. I would be happy to meet with you to further discuss my findings to provide greater detail and answer any questions you might have about my comments.

I have been a member of the Presidio Restoration Advisory Board since its inception in April 1994. In October of 1996, Romy Fuentes of DTSC, Mark Youngkin of the Presidio Restoration Advisory Board (RAB) and Brian Ullensvang of the National Park Service provided comments on the Landfill E Remedial Design that was prepared by U.S. Army. The comments requested additional information on a variety of topics including the clay layer beneath the landfill, seeps and springs beneath the landfill, and potential contamination coming from the landfill contents. While we have collected volumes of data and learned a great deal about Landfill E since that time, some of the questions first offered back in 1996 are yet to be answered and they are relevant to the remedy decision at Landfill E.

Each time we collect new data, a new insight is revealed and a greater understanding of the dynamics at Landfill E is reached. One obvious example is the highest ever methane level of 13% recorded just last year in 2010. Prior to that detection, the highest methane result had been 10%.

I do not advocate for new or additional data. The need to remediate the landfill is clear. But the need to select the appropriate and protective remedy remains. The proposed remedy does prevent direct exposure to landfill contents by humans and that's very important as the waste materials at Landfill E contain the highest levels of toxic metals in soil recorded anywhere at the Presidio. But will the proposed remedy adequately protect groundwater?

The following questions need to be answered in order to select the remedy that will protect the Presidio's Tennessee Hollow watershed groundwater for the long term.

(1) What is the complex relationship between groundwater chemistry and dissolved metals?

- (2) Is the groundwater at Landfill E impaired or impacted in any way?
- (3) What are some of the possible reasons why we do not currently see more dissolved metals in groundwater?
- (4) Could we see an increase in dissolved metals in the future and under what circumstances?
- (5) What metals do we see dissolved in groundwater at Landfill E and why?
- (6) Has there been any analysis of the groundwater chemistry data and its relationship to dissolved metals at Landfill E?
- (7) What are the implications of the proposed remedy for protecting groundwater and the restoration of the watershed down gradient from Landfill E?
- (8) Is the proposed remedy adequate to protect groundwater?

Prior to examining these questions I'd like to review the data relevant to selecting a cleanup remedy.

### What kinds of materials does landfill E contain and at what levels?

As stated above, Landfill E contains high levels of metals in soil, some at the highest levels recorded at any site on the Presidio. The lead maximum detection was 40,000 mg/kg and lead was detected in 97% of the 64 samples analyzed. Copper was found at 39,000 mg/kg and zinc at 46,000 mg/kg. From TABLE 5 in the EKI Field Sampling Report 2003 (EKI FSR 2003) below metals are found in nearly every sample taken from the landfill soil. EKI prepared this report for Presidio Trust as part of the Trust's remedial investigation of the Landfill E.

**TABLE 5**  
**SUMMARY OF CHEMICALS OF CONCERN IN**  
**SOIL OR SEDIMENT SAMPLES COLLECTED AT LANDFILL E**  
Presidio of San Francisco, California

Chemical of Concern (a)	Number of Samples Analyzed	Number of Samples in which Chemical was Detected	Frequency of Detection	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)
Antimony	50	3	6%	3.2	410
Arsenic	53	44	83%	1.1	96
Barium	52	52	100%	21	4,300
Cadmium	44	8	18%	0.74	120
Chromium	52	52	100%	20	300
Cobalt	52	52	100%	3.3	59
Copper	52	51	98%	5	39,000
Lead	64	62	97%	2.1	40,000
Mercury	52	33	63%	0.027	1.5
Nickel	52	52	100%	23	393
Selenium	52	6	12%	0.56	7.1
Silver	52	12	23%	1.3	3,230
Tetraethyl Lead	6	4	67%	0.26	7.3
Vanadium	52	52	100%	16	330
Zinc	52	52	100%	0.58	46,000
4,4'-DDD	45	5	11%	0.0024	0.29
4,4'-DDE	45	4	9%	0.010	1.0
4,4'-DDT	45	3	7%	0.31	2.4
Benzo(a)anthracene	45	3	7%	0.12	44
Benzo(a)pyrene	45	6	13%	0.081	35
Benzo(b)fluoranthene	45	6	13%	0.12	69
Chrysene	45	4	9%	0.13	35
Fluoranthene	45	8	18%	0.082	110
Indeno(1,2,3-cd)pyrene	45	3	7%	0.078	19
Phenanthrene	45	8	18%	0.081	51
Pyrene	45	7	16%	0.041	59
Naphthalene	39	5	13%	0.046	40

**Note:**

(a) A chemical was retained as a chemical of concern ("COC") if it was detected in more than 5% of samples collected and if the maximum concentration of the chemical was greater than the applicable site specific cleanup level.

Table 4-5\_PCOC\_COC.xls COC  
June 2003

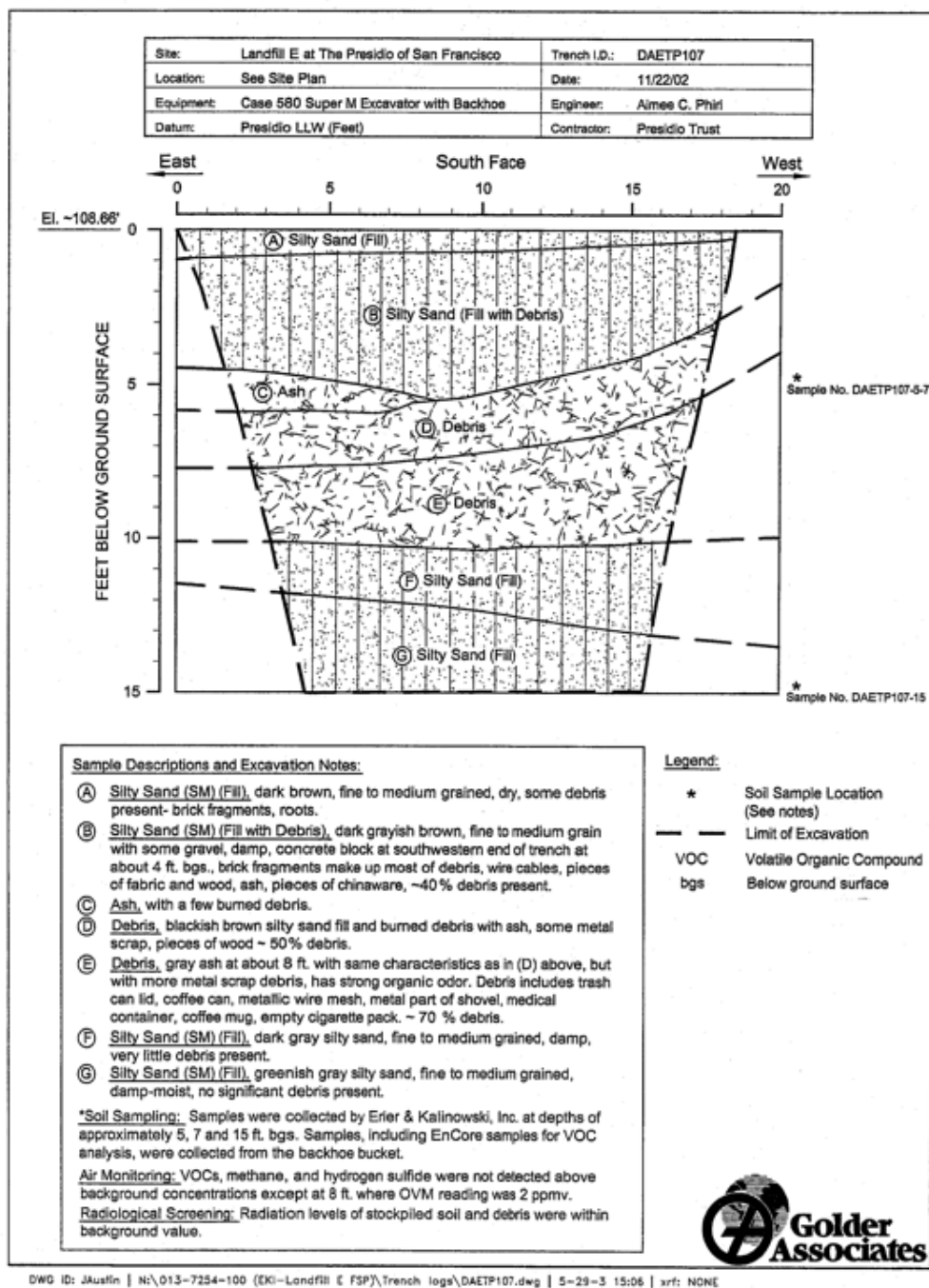
1 of 1

Landfill E Field Sampling Report

### How did the metals get into Landfill E?

Ash is a primary component of Landfill E. Landfill E either received ash from incinerators or materials were burned on site. Both scenarios are equally probable given the large amount of ash

and former incinerators known to exist on the Presidio. The trench log below from EKI FSR 2003 shows just one example of how ash is found throughout much of the fill material. Metals are often concentrated in ash. Ash is known to be alkaline.



**Does the site contain materials that meet the definition of hazardous waste?**

Landfill E contains large amounts of hazardous waste including both RCRA hazardous waste and California Hazardous waste. From the EKI FSR 2003 page 2,

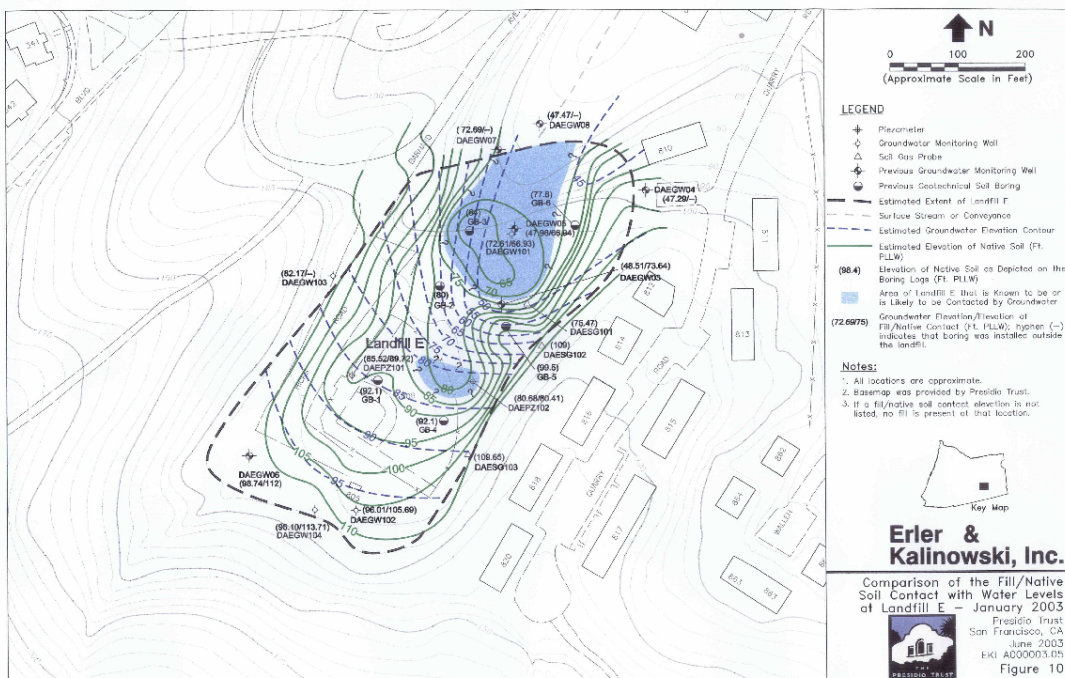
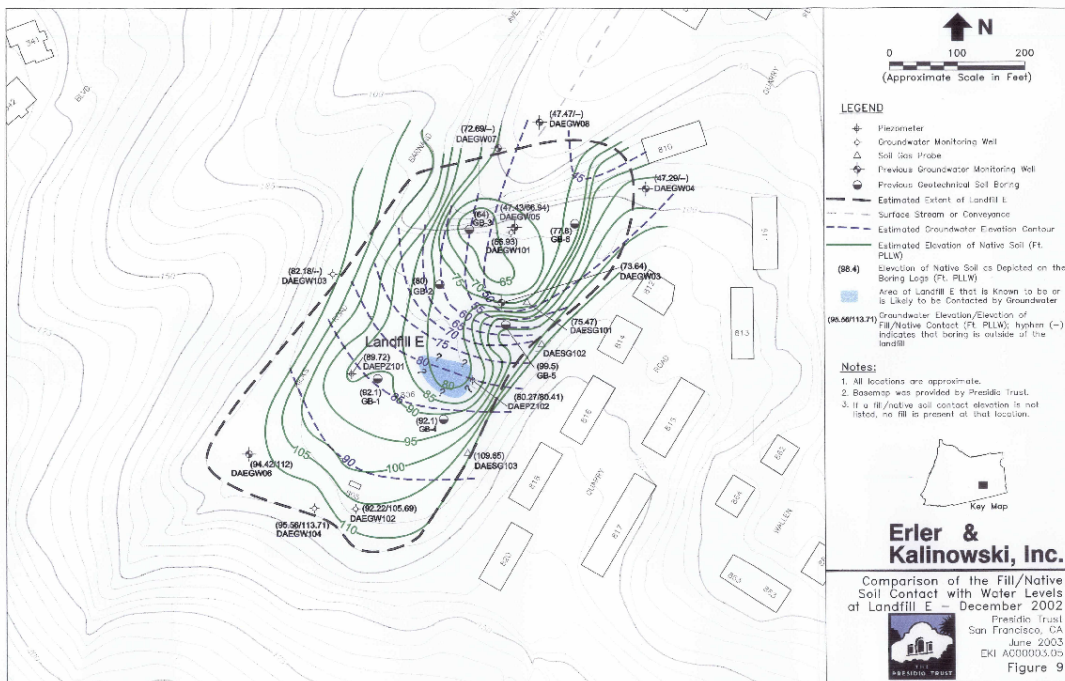
Based on the existing and new data the weighted average of waste classifications for estimating disposal costs of Landfill fill material under an excavation scenario (assuming



that the landfill would be segregated into two zones for disposal purposes) is estimated to be: 50% non-hazardous (e.g. Class II and III wastes), 45% non-RCRA hazardous, and 5% RCRA hazardous. Assuming the landfill is not segregated into two layers for disposal purposes the waste classification is estimated to be: 45% non-hazardous (e.g. Class II and III wastes), 50% non-RCRA hazardous and 5% RCRA hazardous, 50% non-RCRA hazardous, and 5% RCRA hazardous.

### Does groundwater come into contact with the fill materials?

According to the EKI FSR 2003, regional groundwater does come into contact with hazardous waste fill material. The following maps are from the EKI FSR 2003, Figures 9 and 10.



The FS/RAP states that groundwater varies from 1 to 2 feet per year in a single well. However, a review of groundwater elevation data since 1995 shows that groundwater in individual wells varies considerably more than that, *from year to year*. See Table A-7-5, Groundwater Elevation Summary, Landfill E, Presidio Q3Q4 2010 Groundwater Monitoring Report, dated April 2011. This larger variability is evidence that groundwater likely and regularly contacts more waste materials than shown in the above maps. Surface water or perched water may be recharging the underlying aquifer. Any cap system will not be effective in preventing water from entering the fill from below and from the side, coming into contact with the waste and producing impacts to groundwater.

### **Other Known Issues**

The landfill contents are known to contain TPH and VOCs in soil. These COCs have occasionally been detected in groundwater. Benzene and vinyl chloride have been detected in soil gas, along with methane above the Lower Explosive Limit (LEL). For methane, despite the assertion that methane concentrations are decreasing over time, the more we sample Landfill E, the higher detections of methane we find, as evidenced by the recent detection in 2010 of 13% methane.

### **Groundwater Analysis Questions and Concerns**

- 1) What is the complex relationship between groundwater chemistry and dissolved metals?
- 2) Is the groundwater at Landfill E impaired or impacted in any way?
- 3) What are some of the possible reasons why we do not currently see more dissolved metals in groundwater?
- 4) Could we see an increase in dissolved metals in the future and under what circumstances?
- 5) What metals do we see dissolved in groundwater at Landfill E and why?
- 6) Has there been any analysis of the groundwater chemistry data and its relationship to dissolved metals at Landfill E?
- 7) What are the implications of the proposed remedy for protecting groundwater and the restoration of the watershed down gradient from Landfill E?
- 8) Is the proposed remedy adequate to protect groundwater?

### **What is the complex relationship between groundwater chemistry and dissolved metals?**

While the relationship between groundwater chemistry and amount of dissolved metals is a challenging subject, the solubility of metals in water generally depends on pH, alkalinity, hardness and temperature. Each specific metal has its own solubility curve. Generally, as water becomes more acidic, the greater is the solubility of a metal. But acidic pH will be controlled in part according to the alkalinity of the water with alkalinity essentially being a measurement of the water's ability to neutralize acids. This is the buffering capacity of a system. Hardness is a measure of the total concentration of calcium and magnesium and causes precipitation of some metals and lowers their bioavailability. Solubility goes up with increased temperature. While the exact relationship varies from metal to metal, if the water is alkaline with high hardness, the pH will not be allowed to become acidic and metals will not dissolve into the water.

## Is the groundwater under Landfill E altered, impaired, contaminated or impacted?

According to the EKI FSR 2003 on page, “The deeper regional groundwater quality appears impacted by the landfill.” Furthermore, the EKI FSR 2003 makes the following observation in TABLE 1, also shown below.

Water quality parameter data indicate that the alkalinity, specific conductance sulfate concentrations, and total dissolved solids (“TDS”) concentrations are generally higher in groundwater samples collected underneath and down gradient of Landfill E than from up gradient wells. Conversely, the pH is lower in down gradient wells than in the up gradient, background wells. Chloride concentrations do not show an up gradient/down gradient trend; rather chloride levels are much lower in the surface water and perched water samples than in the regional groundwater samples.

**TABLE 1**  
**INVESTIGATION OBJECTIVES, ACTIVITIES, AND PRELIMINARY FINDINGS AT LANDFILL E**  
Presidio of San Francisco, California

Investigation Objectives	Data Description	Summary of Investigative Activities and Preliminary Findings
<b>Site Hydrology and Hydrogeology</b> <i>(1) Evaluate past impacts to groundwater at the site</i>	Data Review Monitoring wells (all) Seeps	<p><u>Investigative Activities</u></p> <ul style="list-style-type: none"> <li>Reviewed historical and recent chemical concentrations detected in Landfill E groundwater and seeps.</li> <li>Reviewed historical and recent water quality parameter data for Landfill E groundwater and seeps.</li> <li>Groundwater chemical data were compared to water quality criteria protective of freshwater aquatic life (before and after restoration of the Tennessee Hollow riparian corridor) and human health if the sampling location was from a zone likely to emerge into Tennessee Hollow near Landfill E (i.e., seeps and wells DAEGW102, DAEGW104, DAEGW06, and DAEGW07).</li> <li>Groundwater chemical data were compared to drinking water standards at the remainder of the Landfill E wells where groundwater is not likely to surface in Tennessee Hollow near Landfill E (i.e., wells DAEGW103, DAEGW104, DAEGW04, DAEGW05, and DAEGW08).</li> </ul> <p><u>Preliminary Findings</u></p> <ul style="list-style-type: none"> <li>Low concentrations of metals have been historically detected in water at Landfill E. Copper, lead, nickel, and zinc have been retained as chemicals of concern (“COCs”) but are believed to be present at background levels.</li> <li>Dissolved metals were not detected in groundwater samples collected from new wells (dissolved metals data were not available from well DAEGW102 due to low productivity).</li> <li>Petroleum hydrocarbons, semivolatile organic compounds (“SVOCs”), and VOCs have been periodically detected in groundwater and/or seep samples; in general, the concentrations are less than site specific cleanup levels.</li> <li>Organic compounds were not detected in groundwater samples collected from new wells.</li> <li>Groundwater and seep sample analytical results do not indicate that significant leaching of potential chemicals of concern (“PCOCs”) from fill into groundwater has occurred.</li> <li>Water quality parameter data indicate that the alkalinity, specific conductance, sulfate concentrations, and total dissolved solids (“TDS”) concentrations are generally higher in groundwater samples collected underneath and downgradient of Landfill E than from upgradient wells. Conversely, the pH is lower in downgradient wells than in the upgradient, background wells. Chloride concentrations do not show an upgradient/downgradient trend; rather, chloride levels are much lower in the surface water and perched water samples than in the regional groundwater samples.</li> </ul>

**What are some of the possible reasons why we do not currently see more dissolved metals in groundwater?**

The EKI FSR 2003 suggests that groundwater chemistry below the landfill is impacted. The likely material that is contributing to the increased groundwater alkalinity beneath and down gradient of Landfill E is the ash contained in the landfill. Increased groundwater alkalinity may also be caused by concrete or demolition debris. Passing through the ash increases the alkalinity of the water infiltrating the landfill. Metals do not dissolve into water with higher alkalinity.

**Could we see an increase in dissolved metals in the future and under what circumstances?**

We currently do not see the high metals content of the landfill dissolving into groundwater beneath the majority of Landfill E, because pH is controlled by the higher alkalinity conditions from the high ash content. Nevertheless, slightly acidic rain water continues to “wash” the landfill contents and leach out the ions contributing to alkalinity and hardness. Eventually, if water is allowed to continue to flow through the landfill contents, the buffering capacity will be reduced and acidic conditions of rainwater will prevail. Earthquakes could also expose areas of high metals to rain water. The low pH conditions will allow metals to leach out of Landfill E and release them to the environment as contamination. This result may take time but water is a strong solvent and will eventually release the toxicity stored in Landfill E.

**What metals do we see dissolved at Landfill E and why?**

For priority pollutants, at least one well down gradient of Landfill E is highly contaminated by dissolved metal and its two closest neighbors show positive indications of being contaminated with the same metal.

Dissolved nickel is found at up to fifty times the groundwater cleanup level of 100 ug/L for nickel at well DAEGW04. Nickel has been found present above cleanup levels in every single sampling session (except one) since sampling began in 1995. The two closest neighboring wells, DAEGW05 and DAEGW08 show detections of nickel approaching and occasionally exceeding the cleanup level.

The following data is extracted from Table A-7-4, Results of Dissolved Metals Analyses, Landfill E, in the Q3Q4 2010 Groundwater Monitoring Report dated April 2011. Bolded values are above the cleanup level of 100 ug/L. Corresponding dissolved nickel data for DAEGW05 and DAEGW08 may be found in the same data table.

Well Name	Sample Date	Nickel (ug/L)	
DAEGW04	12/09/10	<b>150</b>	
	09/02/10	45	
	03/08/10	<b>290</b>	
	03/09/09	<b>170</b>	
	03/11/08	<b>3,800</b>	
	03/07/07	<b>3,200</b>	
	03/14/06	<b>790</b>	
	03/16/05	<b>490</b>	
	03/17/04	<b>3,600</b>	
	08/20/03	<b>5,100</b>	
	03/13/03	<b>4,000</b>	
	12/04/02	<b>3,800</b>	
	09/03/02	<b>2,100</b>	
	06/04/02	<b>520</b>	
	03/12/02	<b>510</b>	
	12/03/01	<b>4,100</b>	J
DUP1203011B	12/03/01	<b>4,100</b>	J
	08/29/01	<b>2,200</b>	
	05/17/01	<b>1,300</b>	J
	05/17/99	<b>893</b>	
	02/15/99	<b>1,270</b>	
	11/16/98	<b>822</b>	
	08/14/98	<b>2,450</b>	
	04/14/98	<b>350</b>	
	01/13/98	<b>420</b>	
	11/10/97	<b>1,700</b>	
	08/11/97	<b>790</b>	
	05/13/97	<b>270</b>	
	02/12/97	<b>260</b>	
	12/05/96	<b>460</b>	
	08/29/96	<b>420</b>	
	06/10/96	<b>730</b>	
	03/07/96	<b>956</b>	
	12/11/95	<b>491</b>	
	09/11/95	<b>340</b>	

## MONITORING WELL SAMPLING LOG (Normal, Low Flow, and Low Yield)

As mentioned previously, the groundwater underneath and down gradient of Landfill E generally has higher alkalinity than the up gradient wells and controls the acidity preventing metals from dissolving into groundwater. However, in this location, slight acidity is more pronounced and the observed result is that dissolved nickel is released to the environment.

EKI FSR 2003 suggests that the nickel exceedances at DAEGW04 are a “localized geochemical anomaly,” due to the lack of detections in any other LFE-area wells. However, there are detections of dissolved nickel approaching and occasionally exceeding the cleanup level, in the two closest monitoring wells to DAEGW04 (DAEGW05 and DAEGW08). The current FS/RAP on page 17 dismisses the EKI FSR 2003 interpretation and suggests the source of nickel is the serpentine soils. However, the dissolved chromium signature normally associated with this serpentinite source interpretation is not present and the well is not completed in serpentine bedrock.

Since nickel detections are observed at the closest two monitoring wells, DAEGW05 and DAEGW08, and these detections approach and occasionally exceed the cleanup limit, the more reasonable and likely interpretation is that these exceedances represent actual dissolved nickel contamination, a priority pollutant exceeding the groundwater cleanup limits.

**Has there been any analysis of the groundwater chemistry data and its relationship to dissolved metals at Landfill E?**

There has been little analysis offering an explanation of why the high amounts of metals in soils in the Landfill E contents are not found in the groundwater at Landfill E. The high nickel concentrations at groundwater well DAEGW04 have been routinely dismissed despite the available data supporting clear toxic release to the environment.

**What are the implications of the proposed remedy for protecting groundwater and the restoration of the watershed down gradient from Landfill E?**

The connection between the landfill contents creating higher alkalinity conditions has not been adequately analyzed and discussed. Rain water is becoming more acidic with time due to world industrialization and will eventually change the conditions at Landfill E, and allow leaching of toxic metals to the environment has not been brought forward. The proposed remedy of a soil cover will allow rain water to infiltrate the landfill contents and continue to create the leachate currently found beneath and down gradient of the landfill. Eventually water infiltration will change the site to acidic conditions or expose new areas of metal contamination within the landfill and allow toxic release to the environment.

**Is the proposed remedy adequate to protect groundwater?**

Since the proposed remedy will allow the conditions to change within the landfill over time and potentially release toxic contaminants to the environment, the proposed remedy is inadequate to protect groundwater.

**What is the recent history of groundwater protection at the Presidio?**

It was suggested that groundwater was not impacted at Landfill 8 and therefore, a sand cover was an adequate remedy for the site. Inadequate well coverage allowed for an additional monitoring well to be installed, but unfortunately only after the remedy was implemented. Recent monitoring of the new Landfill 8 well finds that groundwater is contaminated with DDT, which was previously identified as a contaminant of concern in soil.

Groundwater at Landfill 10 continues to show evidence of impacts to groundwater despite the new partial cover system.



Minimal capping remedies at recent Presidio remediation efforts, such as the proposed soil cover at Landfill E are being shown to be inadequate to protect groundwater.

### **What is the appropriate remedy at Landfill E?**

Hazardous waste from landfill materials must be kept dry and isolated from the environment. The current conditions of saturation from groundwater below and precipitation from above and from the sides will lead to a situation where heavy metals leach out and contaminate the environment. The proposed remedy does not isolate the landfill materials and allows water to come in contact with fill materials. While an impermeable capping system on the top of the landfill would keep landfill materials relatively dryer, it would still allow water to come into the landfill from the sides and from the base. Complete removal of the waste and placement in a fully designed landfill facility is the appropriate remedy for Landfill E.

Capping solutions, while apparently cheaper in the near term, will only postpone the day when water finds its way through the materials, releasing toxic contamination to the environment. The decision to cap today will be terribly expensive in the future when the restored environment downstream collapses due to the release of contamination.

### **Summary**

About half of the contents at Landfill E are considered hazardous waste. A minimal two-foot soil cover will temporarily prevent exposure to humans and the environment. Eventually though, burrowing animals will penetrate the cover and bring contaminated soil to the surface where children at the proposed playing field may be exposed to it. In addition, the proposed soil cover will not protect groundwater for obvious reasons.

The groundwater chemistry beneath and down gradient of Landfill E is not only impacted, but the higher alkalinity conditions resulting from water passing through the ash is currently preventing the metals from being dissolved into groundwater. Eventually, with the passage of time and water through the site, groundwater chemistry within the landfill will change and conditions will allow high metals content of the landfill to leach out to the environment. One groundwater well, DAEGW04 has acidic conditions at its location and has detected a priority pollutant leaching to the environment well above the groundwater cleanup level for many years.

The proposed remedy is inadequate to protect groundwater due the nature how groundwater chemistry conditions will eventually change without complete removal of the waste. Any cover proposal will not prevent groundwater from contacting the waste from the sides or from the base. To fully protect human health and the environment at Landfill E, and so that future land use will be successful, complete removal of the landfill is the appropriate remedy for the site and I support such a remedy.

Thank you again for the opportunity to provide these comments. If I can answer any questions regarding these comments, please contact me.

Sincerely,

Doug Kern

Comment letter example #18

May 3, 2012, comment letter by RAB community member  
Mark Youngkin to DTSC on the Proposed Draft Feasibility  
Study and Remedial Action Plan for Mountain Lake

## Written Comments

From: Mark Youngkin  
3301 Clay St Apt 105  
San Francisco, CA 94118

To: Remedios Sunga DTSC  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710-2721  
[rsunga@dtsc.ca.gov](mailto:rsunga@dtsc.ca.gov)

Date: May 3, 2012

Subject: Proposed Draft Feasibility Study and Remedial Action Plan for Mountain Lake  
Presidio of San Francisco, California

The draft Feasibility Study and Remedial Action Plan (FS-RAP) evaluates the environmental contamination at Mountain Lake and proposes a cleanup action or “remedy” to address the contamination. I support the proposed Remedial Alternative 3, Dredging with Offsite Disposal and Limited Capping, as the preferred remedial action. The following comments address the draft FS-RAP:

### Page 7 – Section 3.3 Conceptual Site Model

Comment: The section labeled Conceptual Site Model presents only background information. The conceptual site model as presented on Figure 3-1 is simply an illustration of potential exposure pathways. The document *Evidence of Environmental change over the last 2000 years at Mountain Lake, in the northern San Francisco Peninsula, California* by Liam Reidy, 2001 Master Thesis at Mountain Lake, University of California at Berkeley provides ample information to develop a conceptual site model. The thesis describes a modern period beginning in 1938 with rapid sedimentation rates and elevated metals (lead, copper, zinc) attributed to runoff from the Presidio golf course and roadway. The highest concentrations of lead, copper, zinc are found in the upper 55 cm (<2 feet) during the modern period. Between 1776 (about 200 cm) and 1937 (about 90 cm), historical concentrations of chromium, nickel, lead, zinc and copper are elevated above prehistoric background in lake sediments. The Reidy thesis attributes the lead-zinc contamination to increased agricultural runoff (vegetation removal and grazing) along with other activities at the Public Health Service Hospital. Lead exceeds the freshwater ecological cleanup concentration beginning circa 1900 (about 5 feet deep). Metal concentrations first increase above prehistoric background with the arrival of European settlers beginning after 1776. Prehistoric background metal concentrations are first encountered at a depth of approximately 200 cm (about 1776) and extend down to 580 cm (about AD 100). It is clear from this data that prehistoric background should be represented in prehistoric sediment samples below a depth of 6 feet. There is no evidence in the core data for significant disturbance of the sediment except for the 1938 construction event that is clearly indicated in cores as a light grey laminated layer up to 10 cm thick at a depth of around 2½ feet.

### Page 8 – PCOCs in Sediment

*“The following are PCOCs in Lake sediment (URS 2011):*

- *Metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium and zinc.”*

Comment: Antimony does not appear as a PCOC even though it is present in several samples of lake sediment above cleanup levels. The drop inlet storm-drain samples 1 and 2 contain antimony at an elevated concentration. DTSC has

requested that post-remediation sediment confirmation samples be collected for antimony. The removal of antimony appears arbitrary and antimony should be listed as a PCOC in this section.

Page 9 -

*“Lead is the primary PCOC in lake sediment due to the high number and widespread distribution of sediment samples containing lead at concentrations exceeding its cleanup level.”*

Comment: Table 2 indicates that lead exceeded the freshwater ecological cleanup value in about 45 sediment samples. Cadmium exceeded the cleanup level in about 54 samples, nickel exceeded in about 50 samples, chromium exceeded in about 26 samples, vanadium exceeded in about 21 samples, zinc exceeded in about 18 samples and copper exceeded in 7 samples. According to the number and distribution of sediment samples, cadmium and nickel should be included in the above sentence along with lead as primary PCOCs. Zinc, vanadium, chromium and copper also occur in sufficient samples to be called widespread and should be included in the above statement on PCOCs as well. If the intent of this statement is that lead is the primary PCOC due to toxicity or the negative impact to the lake ecology than the sentence should be reworded.

Page 10 – Section 3.6.1 Evaluation of Background Metals

Comment: My correlation analysis of the XRF data for metals in sediment cores presented in the 2001 Reidy thesis suggest a strong correlation between two groups of metals: chromium-vanadium-nickel correlate together in one group and lead-zinc-copper correlate together in another. Chromium, nickel and vanadium have mean concentrations from modern sediments (post 1938) similar to the mean of concentrations in historical sediments (1776-1938). Chromium, nickel, vanadium, lead, copper and zinc all show mean concentrations in historical sediments (1776-1938) above prehistoric sediment concentrations. Background concentrations of chromium, nickel and vanadium are only present in prehistoric sediments below a depth of six feet. The Reidy data suggest that chromium, nickel and vanadium occur above freshwater ecological cleanup levels in prehistoric sediments prior to 1776. However, this does not appear to have been verified in the FS/RAP.

Comment: Correlation analysis for the Mountain Lake data shown on Table 2 (provided by Doug Kern) indicates strong correlations between two groups of metals similar to the Reidy thesis data: chromium-vanadium-nickel correlate together and lead-mercury-cadmium-zinc-copper correlate together. Cadmium and mercury are clearly shown in this analysis as related to modern contaminants and not correlated with background metals.

*“Appendix E provides an evaluation of background metals in Mountain Lake sediment.” ... “The evaluation in Appendix E demonstrates that Mountain Lake sediment is likely a mix of Colma formation and greenstone and that chromium, nickel, and vanadium concentrations in Mountain Lake sediment are consistent with background concentrations for that mix of material.”*

Comment: The discussion in Appendix E using sediment color, historical reports, and scatter plots is not convincing and appears unnecessary as the 2001 Reidy thesis data clearly shows elevated chromium, nickel and vanadium concentrations in prehistoric sediments. The RI and FS documents indicate that the Colma background data set is utilized on this project. The FS document expends considerable effort to establish that the Mtn. Lake sediments contain a mixture of Colma and greenstone compromising the use of Colma background. The document does not identify a substitute set of background samples at Mtn. Lake to replace the Colma data or calculate appropriate concentrations for background metals. The Reidy thesis clearly indicates that prehistoric age sediments occur beneath a depth of six feet in lake sediments. All samples recovered from prehistoric sediments below a depth of six feet should be indicated in the document / Table 2 as background samples. The speculation in this appendix should not replace a calculation of background concentrations from site specific prehistoric samples.

*“The COCs in Mountain Lake sediment are a subset of the PCOCs. The COCs are defined as PCOCs in Lake sediment with 95 percent UCL concentrations that exceed the freshwater sediment criteria from the Development of Presidio-Wide Cleanup Levels for Soil, Sediment, Groundwater, and Surface Water (EKL 2002) under baseline (current) conditions and are not associated with background. The 95 percent UCL calculations for baseline conditions are included in Appendix F. Per DTSC’s request, these 95 percent UCL calculations were generated using all existing sediment data collected at the site, not limited to the upper 2.5 to 3.5 feet of sediment.”*

Comment: The conceptual site model utilized in the FS/RAP does not include sediment age data (as developed in the 2001 Reidy thesis). By combining contaminant data from modern shallow sediments with deeper prehistoric sediment, the UCL calculation apparently incorporates a large number of background samples. By including prehistoric samples in the analysis, the 95% UCL calculation is biased towards the lower background concentrations. Please clarify if it was the intention of the UCL calculation to include prehistoric background sample data. In my opinion, the 95% UCL calculation should only be applied to modern sediments impacted by runoff contamination. The background samples should be separated from the data set and analyzed for the range of concentrations typical of the background metals chromium, nickel and vanadium (as these potentially exceed freshwater ecological cleanup levels in prehistoric samples).

*“However, as discussed in Section 3.6.1 and Appendix E, nickel in Lake sediment is representative of background concentrations in native and fill material. Therefore, nickel is not a COC in Lake Sediment.”*

Comment: The distinction between native and fill material (as used here) is confusing in regard to background. The concept of a background concentration in both native and fill material appears contradictory and not adequate justification for removing nickel as a COC. The document fails to define what samples represent background and therefore neglects to separate background samples from the data set shown on Table 2. I believe that a commonly accepted definition of background would include the native prehistoric sediments below six feet with no historic or modern metal contamination and naturally occurring metal concentrations. If the document is using another definition(s), please clarify.

Comment: Although chromium, nickel and vanadium may be naturally occurring above the freshwater ecological cleanup value in prehistoric sediments (subject to verification), these metals are common runoff pollutants and may have impacted the lake above prehistoric background. At Mtn. Lake, the only sediments containing naturally occurring metal concentrations are prehistoric sediments (pre-1776) greater than six feet deep. A significant number of deeper sediment samples are shown on Table 2 and the estimation of prehistoric background (pre-1776) concentrations does not appear to be difficult. No matter how small the background data set from Table 2 is – this data would be preferable to the analysis presented in Appendix E. Until the concentrations of the background metals chromium, nickel and vanadium are determined from the existing Mtn. Lake data set, the document will continue to arbitrarily ignore these metals and not determine appropriate cleanup values for them.

*“The 95 percent UCL concentration for cadmium based on the 2005 data set is below the cleanup level, so cadmium is not a COC in Lake sediment.”*

Comment: It is evident from a cursory inspection of the 2005 sampling data presented on Table 2 that a significant number of deeper samples (>2.5 feet) are included in the sampling data. All samples below about 2.5 feet are historic age (1776-1938) and all samples below 6 feet are prehistoric age (pre-1776). By including the older historic and prehistoric samples in the data set for the 95% UCL calculation, the result is biased towards lower background values. Please clarify if the 95% UCL calculation for cadmium includes a significant percentage of background data and if this is a significant bias.

Comment: Cadmium exceedances in the sample data occur as /or more frequently than lead exceedances. Cadmium contamination (POCC) may be as widespread and common as lead in Mountain Lake. The presumed source of post-1900 cadmium contamination is also runoff. Cadmium is released from car exhaust, auto tires, metal processing, battery and paint manufacturing, waste hauling / disposal, the burning of household or industrial waste, coal or oil, and from agricultural runoff from phosphate fertilizers. The 2001 data set for cadmium is suspect and the department has requested testing of cadmium during confirmation sampling. The FS-RAP should retain cadmium as a legitimate COC and not use the ad hoc 95% UCL calculation (that includes background data) to remove cadmium as a COC.

#### Page 12 – Section 3.6.3 Remedial Action Area

*“Post-remediation confirmation sampling following sediment removal in the remedial action area would confirm that COC concentrations have been reduced to acceptable risk levels.”*

Comment: The confirmation sampling is limited only to lead and motor oil. Is the correlation between lead and other common stormwater contaminants such as antimony, cadmium, zinc, copper, mercury, and pesticides so strong that this limited confirmation sampling will ensure that the all contamination is reduced to acceptable risk levels? The document should present analysis indicating that lead and motor oil are reliable indicators of the broader suite of modern runoff contaminants or re-instate a broader range of COCs to the confirmation sampling.

Comment: Instead of adding former PCOCs back to the confirmation sampling suite in a piecemeal fashion, please consider revising the evaluation of COCs to include a larger suite of COCs that would also be collected for confirmation sampling including antimony, cadmium, zinc, copper, mercury, pesticides, etc. The collection of confirmation samples that are not COCs is problematic from a public perspective because the document does not specify procedures for non-COC contaminants.

#### Page 36 - – Section 8.1 Remedial Alternative Implementation

*If COCs are detected at concentrations exceeding cleanup levels in samples collected at the limits of dredging, the Trust will consult with DTSC to:*

- *Evaluate the risk associated with the remaining COC concentrations.*
- *Assess potential impacts of continued dredging on slope stability.*
- *Determine if additional dredging is warranted and feasible.*

Comment: As the confirmation sampling will include metal analytes that are not considered COCs, this section does not apply to the confirmation sampling of antimony and cadmium (or any others added to the confirmation sampling). It seems unusual to have confirmation sampling for constituents that are not considered COCs and also without procedures specified in the FS-RAP to address exceedances discovered during confirmation sampling. It would be more appropriate to include all problematic and/or suspect metals identified in the RI as PCOCs in the FS document as COCs and determine a reliable-representative suite of these COCs to use for confirmation sampling.

#### Page 37 -

*“As part of the dredging operations, confirmation sampling and analysis for COCs in sediment will be performed to verify that material left in place meets cleanup levels or to document the quality of sediment to remain where slope stability prevents sediment removal. Confirmation samples will be analyzed for the two COCs: lead and TPHmo. Although not identified as a COC, due to potential analytical interferences (see Appendix D), confirmation samples will be collected and analyzed for cadmium at locations where existing samples have cadmium concentrations exceeding its cleanup levels. Similarly, as requested by DTSC, confirmation samples will also be collected and analyzed for antimony at locations*

where existing samples have reporting limits exceeding 3.0 mg/kg (the background threshold value for Colma Formation).

Comment: To my knowledge, cadmium is not known as background at the Presidio. The discussion in the FS-RAP is not convincing that cadmium is from some unknown bedrock source (this statement may have been removed in the last public version of the document). Because these metals have dubious data sets, I appreciate that antimony and cadmium were added to the confirmation sampling. However, both metals would be more appropriately add to the list of COC for this project. This would ensure that the procedures in the document applicable to COCs would apply to these metals as well.

*“Results of confirmation sediment analyses will be compared to cleanup levels in Table 3-1 to assess whether additional dredging should be considered. If the concentrations of all COCs analyzed are below cleanup levels, then dredging activities will be terminated. For confirmation samples containing one or more COCs at concentrations exceeding cleanup levels, the occurrence and concentration of the COC will be evaluated to assess the relationship to a site specific release. If the COC concentration appears to be related to a site-specific release, sediment will be further dredged and the newly dredged area will be re-sampled and analyzed for the COC that triggered the additional dredging. If the COC concentration does not appear to be related to a site-specific release, the confirmation sample results for the COC constituent exceeding the cleanup level will be evaluated using a compound-specific 95 percent UCL of the mean and the UCL compared to the cleanup level to assess whether that COC poses residual risk. Concentrations of metals that appear to represent background in naturally occurring sediment or fill material will be evaluated using existing site data and background data to assess whether the metal concentrations are related to a site-specific release. The Trust will consult with DTSC regarding confirmation sample results, potential additional dredging, and partial cap areas. Additional details related to confirmation soil sampling, analytical test methods, sample frequency, and decision logic for additional dredging will be included in the RDIP.”*

Comment: From this description, it is difficult to determine whether a credible risk evaluation of confirmation samples can be performed during the dredging operation. The use of the term “site-specific release” is vague as used in this section in reference to confirmation samples. The term “site specific release” should apply to all contaminants related to modern runoff including lead, zinc, copper, antimony, cadmium, and pesticides. Since the majority of the contaminants associated with a site specific release have already been eliminated as COCs in the risk evaluation, the usefulness of this concept during the confirmation sampling is dubious. This section should be significantly expanded to provide more understandable and specific guidelines / procedures for determining a site specific release.

+++++

## **Appendix E: Evaluation of Background Metals in Mountain Lake Sediment**

Comment: The use of color to assign an origin of greenstone to these sediments is speculative. Since the sediments are derived from a combination of windblown and runoff material, it cannot be determined from these scatter plots if the origin of the metal contamination is from greenstone, serpentine or both. Because the sample data mixes sediment from modern, historic and prehistoric ages, then sediments known to be contaminated (post-1776) have been included on the scatter plots and any conclusions drawn from this data are suspect. It is interesting to compare Mountain Lake values to regional studies with a large range of values. But this data is not site specific and potentially misleading. The Reidy thesis data clearly shows that chromium, nickel and vanadium concentrations are elevated in prehistoric sediments. An analysis including only prehistoric samples greater than six feet deep could determine the range of concentrations typical of prehistoric background. A cursory examination of deeper samples shown on Table E-1 suggests that the prehistoric (below 6 feet) background concentration (if calculated) may be below the freshwater ecological cleanup level for chromium, nickel and vanadium. Please clarify why the document avoided calculating background concentrations for these metals from the data set on Table 2.



+++++

## Appendix I - California Environmental Quality Act (CEQA) Documentation

### Appendix B Figures

#### Figure 6: Highway 1 Stormwater Management Elements

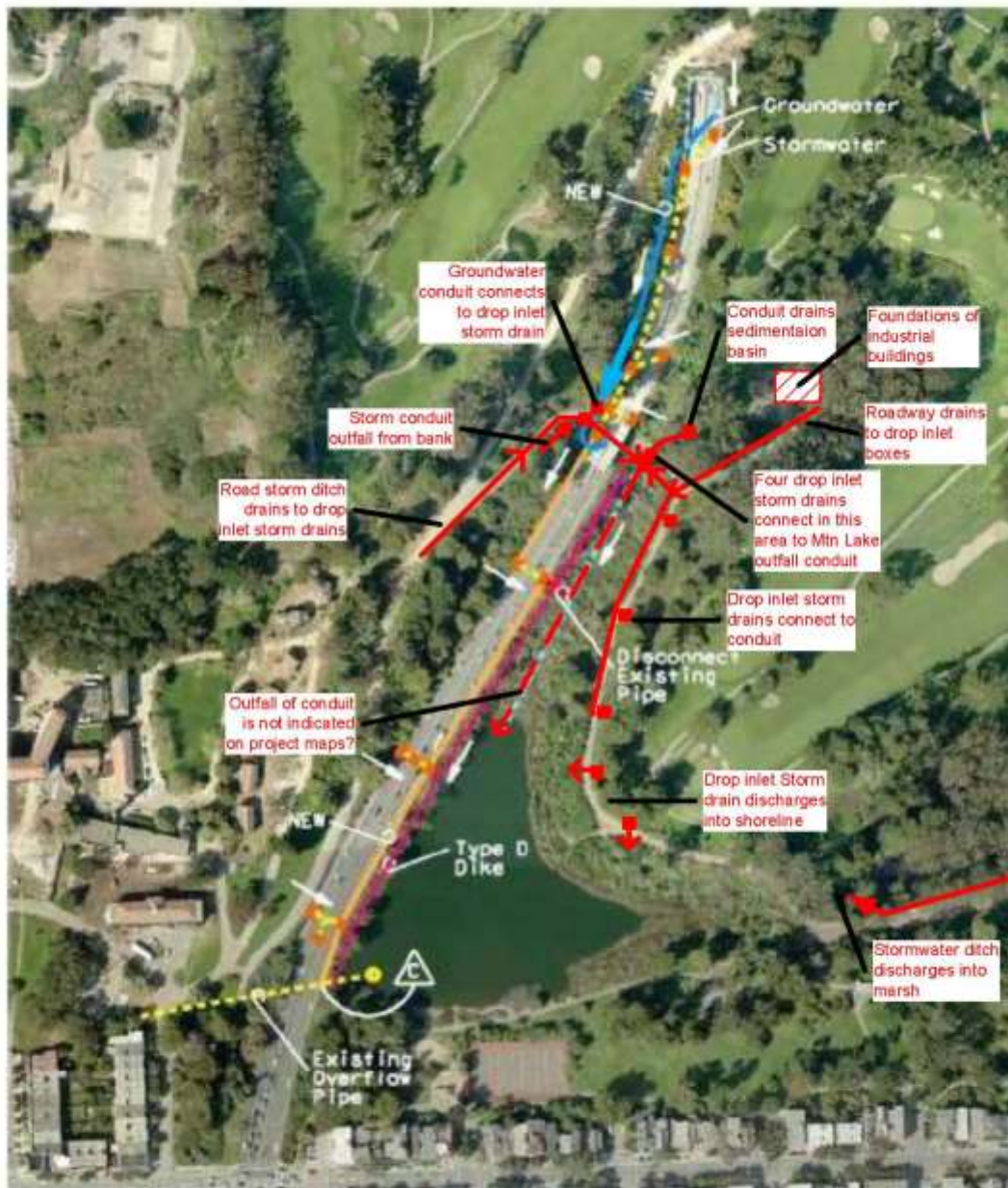
Comment: Figure 6 depicts separate systems for groundwater and stormwater. Groundwater from the Highway 1 tunnel is conveyed by conduit to the north end of the lake (blue line). However, the groundwater flow (blue line) is incorrectly shown on the figure. My field inspection indicates that the groundwater conduit joins a network of four drop inlet storm drains beneath Park Presidio Blvd. These storm drains are not apparent on this figure. Other drop inlet storm drains along the Mtn. Lake perimeter road also connect to this storm drain network. I understand this perimeter road was heavily patrolled by the Army for many decades. It appears that this drainage system at the north end of the lake is designed for sizeable water flows and may include overflow storm water from the Highway 1 above. There is also a stormwater conduit to what may be a Highway 1 sedimentation pond. This storm water system is not shown on project maps.

Only one sediment sample is shown at the north end of the lake and this sediment sample (MLSE25) may be located a considerable distance from the actual outfall location. The drop inlets & connecting conduits should be flushed and the sediment removed. The exact outfall location should be determined. Any obvious sediment at the outfall or along any connecting water course to the lake (through the marsh) should be removed prior to dredging activity. These actions should occur prior to construction of the dredging corridor (that appears to follow the course of the outfall alignment) to avoid disturbance of outfall sediments by construction activities. The disposition / proposed mitigation of this stormwater system during/following construction activities should be added to the FS/RAP. Please determine if the stormwater network described at the north end of the lake is appropriate to add to this project. See attached sketch map of stormwater system at north end of Mtn. Lake.

Thank you for your attention to my remarks.

Sincerely,

Mark Youngkin  
Community Co-Chair  
Restoration Advisory Board  
Presidio of San Francisco



**Figure 6: Highway 1 Stormwater Management Elements**

Original of this figure shows groundwater from Hwy 1 tunnel draining by conduit directly to Mtn. Lake with no stormwater inputs. This is incorrect. A significant network of drop inlet boxes, roadway ditches, and a sedimentation basin (adjacent to the Hwy 1 roadway) discharge into Mtn. Lake through this groundwater conduit. The Mtn. Lake outfall is shown as uncertain with no location indicated on project maps.

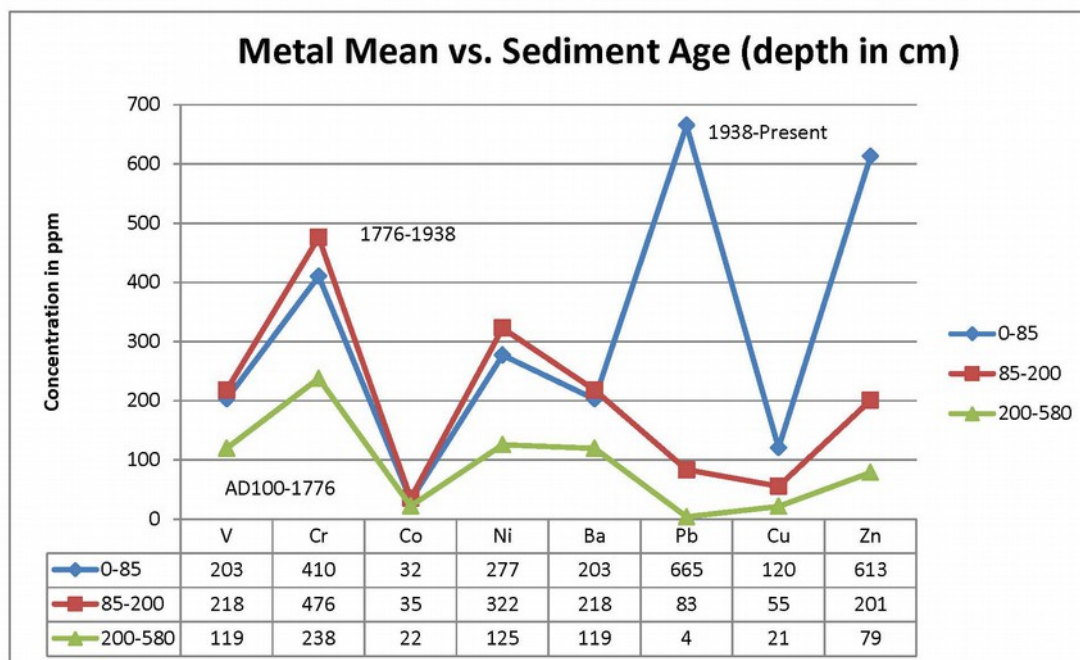
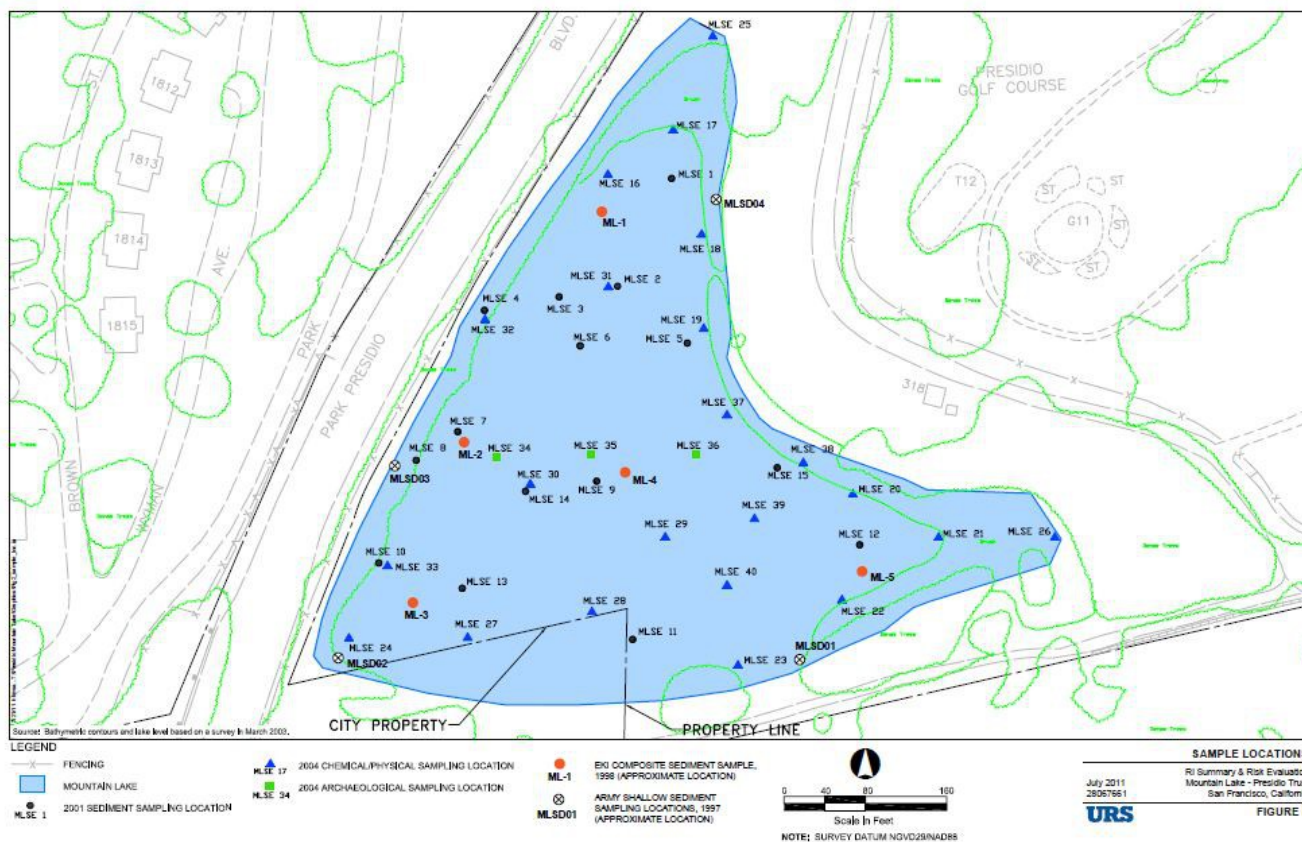
Comment example #19

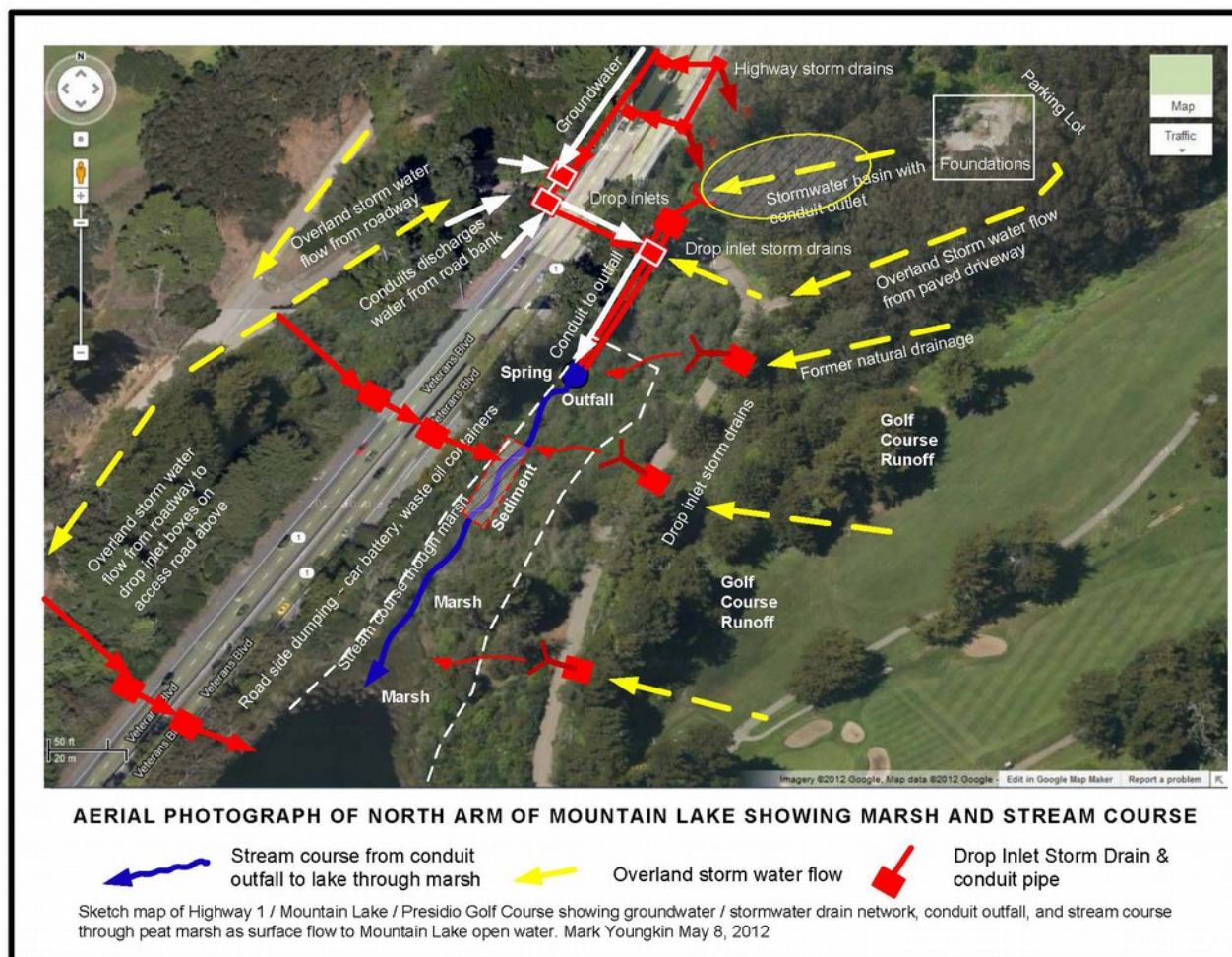
May 8, 2012, excerpt of slide presentation at RAB meeting by community member Mark Youngkin to RAB agency and community members on the North Arm of Mountain Lake

## SUMMARY OF MARK YOUNGKIN COMMENTS ON MTN. LAKE FS-RAP

- I support the proposed dredging remedy as the majority of sediment contamination is removed for offsite disposal.
- Conceptual Site Model in FS-RAP does not incorporate age of sediment versus depth information from 2001 Reidy thesis and no background samples are identified.
- Prehistoric samples are not recognized in sampling data and 95% UCL calculations includes background data lowering UCL for cadmium & other metals.
- Prehistoric background samples should be separated from the sampling data and analyzed separately to obtain representative background concentrations for all metals.
- Chromium-nickel-vanadium correlates together and background concentrations should be determined from sampling data.
- Origin of chromium-nickel-vanadium in prehistoric sediment is not important. It could be greenstone, serpentinite or both.
- Other metals are also widespread contaminants in Mt. Lake sediments besides lead including cadmium, vanadium, zinc, chromium, nickel and copper.
- Correlation analysis indicates lead-mercury-cadmium-zinc-copper correlate together as modern runoff contaminants.
- Only lead-motor oil is retained as COC for confirmation sampling in FS-RAP.
- DTSC is adding metals back into confirmation sampling – cadmium and antimony so far - but not requiring these metals to be COC.
- COC / confirmation sampling should be expanded to include most widespread metal contaminants / pesticides in lake sediments.
- The RAP contains a vague contingency clause for determination of a “site specific release” during dredging / confirmation sampling.
- Map provided by Caltrans for storm drain network is inaccurate and misleading. Significant storm drain outfalls have not been sampled.
















**Figure 35**  
**USACE Potential Jurisdictional Wetlands**  
**at Mountain Lake**



Area of Detail



-  Potential Jurisdictional Wetland
-  Other "Waters of the U.S."
-  Soil Test Pit
-  5-foot Contour Line
-  Seasonal Stream



0 30 60 90  
Meters

Scale 1:3,000

March 2000 Ortho Photo





View of marsh/wetland in North Arm of Mountain Lake



View of storm drain drop box inlet in North Arm of Mountain Lake





View of lead battery / highway debris in North Arm



View of suspected storm drain outfall area in North Arm marsh





View of stream in North Arm marsh suspected to flow from unknown storm drain outlet



View of stream in North Arm marsh showing sand sediment likely discharged from unknown storm drain line outlet with potential for lead contamination of sediment

## NORTH ARM OF MOUNTAIN LAKE

### **Natural Resources**

- A significant native marsh resource is present that is a potential designated wetland.
- Trails were recently cut through the marsh vegetation and the stream flagged.
- A wetland designation study could be performed now using these trails.
- Spring water is collected and discharges from outfall as a freshwater spring and unrecognized water source for Mountain Lake.
- The marsh and stream have not been protected and the stream corridor is scheduled for construction activities.

### **Contamination Issues**

- The northern arm of Mountain Lake and shoreline is not included in the current remediation project.
- Current maps are misleading and all conduits / storm drains should be video surveyed as the basis for a new project map.
- A large surface area of Highway 1 and surrounding roadways is collected by a system of curbs, berms, drop boxes, and conduits that discharge to marsh.
- The potential amount of sediment associated with this roadway collection system is large and sediment can be observed along the streambed.
- The storm water outfalls are point sources of heavy metals / pesticides.
- Construction activities could disturb contaminated sediment prior to investigation.

THE END

Comment letter example #20

February 4, 2013, group comment letter by RAB community  
members to DTSC and Presidio Trust on the Draft  
Feasibility Study and Remedial Action Plan for Baker Beach  
Disturbed Areas 1A and 2

From: Community Members  
Restoration Advisory Board  
Presidio of San Francisco  
Care of Mark Youngkin, Community Co-Chair  
3301 Clay Street, Apt. 105  
San Francisco, CA 94118

To: Lori Koch, DTSC  
700 Heinz Avenue, Suite 200  
Berkeley, CA 94710-2721  
[Lori.Koch@dtsc.ca.gov](mailto:Lori.Koch@dtsc.ca.gov)

Eileen Fanelli, Presidio Trust  
P.O. Box 29052  
103 Montgomery Street  
San Francisco, CA 94129-0052  
[efanelli@presidiotrust.gov](mailto:efanelli@presidiotrust.gov)

Date: February 4, 2013

Subject: Written Comments concerning:

- 1) Draft Feasibility Study and Remedial Action Plan, Baker Beach Disturbed Area 1A, Presidio of San Francisco, California dated December 2012
- 2) Draft Feasibility Study and Remedial Action Plan, Baker Beach Disturbed Area 2, Presidio of San Francisco, California dated December 2012

Dear Ms. Koch and Ms. Fanelli,

The Restoration Advisory Board (RAB) provides a public forum on clean-up issues, as well as provides for the expression and careful consideration of divergent points of view on Presidio cleanup issues. Community Members thank you for the opportunity to review and comment on the proposed cleanup plans for these important sites on the Presidio coastal bluffs. Community members of the RAB have spent a number of years following plans for these sites and we wish to see both Disturbed Areas remediated so that natural and cultural resources are protected to the maximum extent possible.

The Presidio of San Francisco is a unique and magnificent national park with exceptional natural and cultural resources, highly valued by millions of visitors annually, and its status as national park must be carefully protected now and into the future. Community Members have been strongly supportive of clean closure remedies in the past and we remain so today. Community Members strongly advise that current and future generations of park visitors would be best served by the complete removal of waste overlying the natural and cultural resources situated on the coastal bluffs of the Presidio's Area A. We agree with the conclusion of both documents that Alternative 3 – Excavation is the most appropriate remedy for the contamination at both sites.

We do have comments for the record that we hope will be seriously considered during your continuing deliberations on the proposed remedies. Community Members submit the following general comments for consideration:

- 1) Community members appreciate and support the Trust proposals for clean closure of Baker Beach Disturbed Areas 1A and 2, and we believe the proposed plans should be strengthened to



the maximum extent possible. RAB community members believe that for clean closure to be effective, all waste and contamination should be removed. We have repeatedly advocated that the excavation of landfills remove all waste and contamination associated with the site. We believe that it is in the best interest of the community, volunteers, the public areas and the nearby natural resources that all contamination and waste is removed to the extent feasible. Because the documents do not include a residential scenario for risk assessment, any cleanup values applied to these sites must allow unrestricted future land use for the National Park Service's future management.

- 2) Community Members have previously expressed concern that the land managers -- the National Park Service and the Presidio Trust -- have been unable to agree on the methodology of the risk assessments and resulting cleanup values for the key chemical contaminant, PAHs. When two agencies with technical expertise disagree, we have no choice but to advocate for the most conservative position and we provide additional technical comments on the risk assessment process (see attached technical comments). The RAB understands that the DTSC believes the proposed cleanup values are protective of future visitors, staff and volunteers. We have witnessed the intricacy of the risk assessment process and have participated in it for 18 years. We continue to advocate for the most conservative cleanup values at both sites and suggest that existing Presidio-wide screening values are an appropriate and conservative cleanup level.
- 3) It is troubling that the RAP for Baker Beach Disturbed Area 1A includes language that suggests some lead contamination and DDT contamination is not associated with Army disposal activities/practices or is too widespread to address. It is unclear from the text how the Trust has confirmed these distinctions by field sampling. We argue that the excavation lines drawn in the RAP are arbitrary if the extent of lead or DDT contamination has not been fully delineated. Excavating only to these lines would leave a ring of lead or DDT contamination surrounding portions of the site. Residual contamination is not a desirable outcome in a national park. Because important decisions are to be determined during the field activities and in the future that depend on the results of confirmation samples, all confirmation sampling should include analysis for lead and DDT. It is unclear from the document how the presence of residual lead or DDT contamination above cleanup levels would be addressed in the future. Please provide guidance or language in the document outlining the regulatory procedure for documenting the presence of residual lead or DDT contamination and carrying this documentation forward for future action to address the outstanding contamination.
- 4) Because of the potential short-term risk for slope rebound or cracking around excavated areas, the document indicates that some unknown portion of the contaminated soil may not be removed at Baker Beach Disturbed Area 2 and a soil cover may be implemented in these yet to be determined areas. Future analysis is to be used to determine the extent of the impacted areas and what specific measures will be incorporated into the remedial design. We are concerned that this approach is too vague and undefined. There is significant potential that Alternative 3 would not address a portion of the site. We would like written assurance in the document that the application of a soil cover will be applied to only a very limited portion of the site and only as a last resort.

We have attached written comments to this letter from our technical review committee for your consideration. The technical comments provide additional detailed discussion concerning important aspects of the site-specific PAH cancer risk assessment for Baker Beach Disturbed Area 1A.

The remediation of these two sites represents another milestone for the restoration of the Presidio and we are pleased to offer our close attention to this matter. We also want to express our appreciation for the diligent efforts of the Presidio Trust and the Department of Toxic Substances Control to investigate the

Presidio thoroughly and determine reasonable remedies. We appreciate the time and effort you have expended on these documents and for meeting with us to discuss our concerns. We recognize that many of our previously stated concerns have already been incorporated into draft documents and we appreciate your attention.

Please contact me by phone at (415) 730-6189 or by email at [my@markyoungkin.com](mailto:my@markyoungkin.com) if you need additional information or clarification. Thank you for your continued attention to our comments.

Sincerely,



Mark Youngkin

Community Co-Chair

Representing the Community Members of the Restoration Advisory Board

Attachment: Restoration Advisory Board Technical Comments on the Draft Feasibility Study and Remedial Action Plan, Baker Beach Disturbed Area 1A, Presidio of San Francisco

Distribution: RAB Members by email



**Restoration Advisory Board Technical Comments on the Draft Feasibility Study and Remedial Action Plan, Baker Beach Disturbed Area 1A, Presidio of San Francisco (AMEC, December 2012)**

**Comment 1: The Baker Beach Disturbed Area 1A Draft Feasibility Study and Remedial Action Plan site-specific PAH cancer risk assessment does not completely and adequately evaluate PAH cancer risk and must be changed to do so.**

Section B7 (Uncertainty Analysis) of the December 2012 Draft Feasibility Study and Remedial Action Plan, Baker Beach Disturbed Area 1A, Presidio of San Francisco (BBDA 1A FS-RAP) includes the following statement: “This evaluation is based on estimation of potential cancer risks from seven PAHs identified by the EPA as carcinogenic. For these cPAHs, EPA and DTSC have adopted methods for estimating risks, specifically the cancer slope factors and PEFs that were used in this evaluation. The Office of Environmental Health Hazard Assessment (OEHHA) has also recently identified 25 potential and possible cPAHs, including the seven evaluated in this human health risk evaluation (OEHHA, 2009). Only the seven cPAHs evaluated in this human health risk evaluation are included in standard laboratory EPA analyses for PAHs and semivolatile compounds (i.e., EPA Methods 8310 and 8270). Therefore, only the seven cPAHs evaluated in this risk assessment were reported in site soil samples. Also, DTSC and EPA have not adopted slope factors or PEFs for these compounds to estimate risk. Therefore, additional potential and possible cPAHs were not evaluated in this risk assessment.”

In the April 12, 2012 Department of Toxic Substances Control (DTSC) memo “Draft Feasibility Study and Remedial Action Plan, Baker Beach Disturbed Area 1A from Kimiko Klein to Robert Boggs” (DTSC comment memo), the following comment is made: “The HERO [Human and Ecological Risk Office] assumes that the CSFs listed in this table for carcinogenic PAHs are derived by applying potency equivalency factors (PEFs) to the benzo(a)pyrene CSF. The PEFs used should be added to this table, should be those recommended by the HERO in the HERO Human Health Risk Assessment (HHRA) Note Number 4, and the source of the PEFS should be cited in a footnote to the table.”

The CSFs (cancer slope factors – equivalent to CPFs) listed in that draft are the same as the CSFs listed in the current BBDA 1A Feasibility Study and Remedial Action Plan (FS-RAP). The RAB agrees with the comment in the DTSC memo. The PEFs and their associated CSFs for the polycyclic aromatic hydrocarbons (PAHs) listed in the DTSC HHRA Note Number 4 but not included in this document should be added, along with analytical data for those PAHs, and those analytical results should be factored into the site-specific cancer risk assessment for BBDA 1A. Those PAHs are as follows: benzo(j)fluoranthene, dibenz(a,j)acridine, dibenz(a,h)acridine, 7H-dibenzo(c,g)carbazole, dibenzo(a,e)pyrene, dibenzo(a,h)pyrene, dibenzo(a,i)pyrene, dibenzo(a,l)pyrene, 5-methylchrysene, 1-nitropyrene, 4-nitropyrene, 1,6-dinitropyrene, 1,8-dinitropyrene, 6-nitrochrysene, 2-nitrofluorene. These PAHs are generally considered to be carcinogenic by the California Environmental Protection Agency (Cal/EPA).

It should also be noted that dibenzo(a,e)pyrene can be analyzed by the U.S. Environmental Protection Agency (US EPA) analytical method 8270C. This suggests that the other

dibenzopyrenes can also be analyzed using this method. Additionally, well established analytical methods are also available for the determination of the other PAHs listed above in soil.

Inclusion of these PAHs in the site-specific risk assessment is especially important because several of the dibenzopyrenes have PEF values of 10; that is, they have 10 times the carcinogenic potency of benzo[a]pyrene. Exclusion of these PAHs could lead to a substantial underestimation of cancer risk, which could lead to the generation of PAH soil cleanup levels for BBDA 1A which are insufficiently health protective.

One general requirement for performing site-specific remediation risk assessments instead of using an existing screening cleanup level is that they include all necessary data to perform the site-specific risk assessment. If the PAH data described above are not available, the Human Health Preliminary Remediation Goal (PRG) site cleanup level for benzo[a]pyrene listed in Table 3-3 of the Presidio-Wide Cleanup Level Document should be used in the FS-RAP.

**Comment 2: The BBDA 1A FS-RAP site-specific health risk assessment does not adequately protect infants and children from cancer risk and must be revised to do so.**

The document does not include adjustments for cancer risk due to PAH exposure in infants and children. US EPA and Cal/EPA have become concerned that the risks of cancer from exposures to carcinogens occurring from conception through puberty can be different than those from exposures occurring in adulthood. Exposure to a carcinogen early in life may therefore result in a greater lifetime risk of cancer.

US EPA and Cal/EPA have published risk assessment documents concerning the potential increased susceptibility of infants and children to carcinogens. US EPA addressed the potential for increased susceptibility to cancer caused by environmental chemicals when the exposure occurs during an early lifestage in “Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens” (US EPA, 2005a), which is a companion to the revised “Guidelines for Carcinogen Risk Assessment” (US EPA, 2005b). Cal/EPA addressed the same issues in the Hot Spots Technical Support Document for Cancer Potency Factors (OEHHA, 2009). Both documents have received internal and external peer review.

Both agencies recommend the use of exposure age adjustments to cancer potency factors (CPF<sub>s</sub>) when calculating cancer risk from carcinogen exposures. The OEHHA ASF<sub>s</sub> for carcinogens are 10 for third trimester to age 2 years, and 3 for age 2 to age 16 years. The ASF<sub>s</sub> are multiplied by the CPF to calculate the cancer risk for each appropriate exposure year. An example of the use of ASF<sub>s</sub> is included in Table 1.

These ASF<sub>s</sub> should be used to calculate cancer risk for exposures to residents, recreational users, and for volunteers if they could potentially include children under 16 years of age. Therefore, the BBDA 1A FS-RAP should be revised to include these cancer risk adjustments for infants and children in the cancer risk calculations.

**Table 1. Example of default ASF use for a lifetime exposure (excerpted from OEHHA, 2009).**

Carcinogen Potency = 1 (mg/kg-d) <sup>-1</sup>	Exposure = 0.0001 mg/kg-d		
	ASF	Duration	Risk
(third trimester to age 2 yrs)	10	2.25/70	$0.321 \times 10^{-4}$
(age 2 to age 16 yrs)	3	14/70	$0.600 \times 10^{-4}$
(age 16 to 70 yrs)	1	54/70	$0.771 \times 10^{-4}$
<b>70 year Lifetime Risk</b>			<b><math>1.7 \times 10^{-4}</math></b>

**Comment 3: The BBDA 1A FS-RAP comparison of post-remediation cancer risks to risks from exposure to contaminated industrial sites is inappropriate and must be removed from the document.**

Section 3.3.2 (Human Health Risk Evaluation) of the BBDA 1A FS-RAP states on Page 3-4 “the site-specific risks only slightly exceed the background risk for carcinogenic PAHs in Northern California soil, ranging from  $1 \times 10^{-6}$  to  $3 \times 10^{-6}$ ”. This background risk is calculated based on PAH levels observed at or near Manufactured Gas Plant (MGP) sites and presented in the "PG&E/Environ Report" (Background Levels of Polycyclic Aromatic Hydrocarbons in Northern California Surface Soil, Environ *et al*, for PG&E and US Navy, June 7, 2002). This comparison is inappropriate, since unlike the Presidio areas bordering the ocean, the source of the PAH soil data sets described in the Environ report were industrial areas. A more appropriate comparison would be to areas such as the Point Reyes seashore. This statement should be eliminated.

Additionally, as noted above, the comparisons of cancer risk due to PAH exposure at BBDA 1A to similar risks near MGP sites in section B5 (Northern California PAH Background Concentrations) of the document are inappropriate. Such comparisons should be removed from this and all other sections of the document

**Comment 4: The BBDA 1A FS-RAP overstates the past and present contribution of the Golden Gate Bridge to lead contamination at BBDA 1A and must be edited to eliminate this overstatement.**

Section 3.2 (Nature and Extent of Contamination) of the BBDA 1A FS-RAP states on page 3-3 “In the northern portion of the site, lead only was detected in one sample at a concentration above the PRG. There are no documented Army practices in this area that would have contributed to lead contamination. The lead could be derived from lead-based paint from the Golden Gate Bridge or other undocumented sources.”

This section indicates that there are no documented Army practices in the northern portion of the site that would have contributed to lead contamination. This is incorrect. The National Park Service (NPS) noted in comments to the Trust dated November 23, 2010 regarding the

November 2010 draft BB1A FS-RAP that there is a building foundation still located in this area and the foundation is consistent with that of a wood framed building. Lead-based paint from this former building is a documented potential source of the lead in the northern portion of the site and should be considered in this discussion. The Golden Gate Bridge should not be presented as a more likely source of the lead than the former building located at the site of the elevated lead detection. The FS-RAP should be changed to reflect this.

Additionally, Section 8.2 (Basis of Design) of the Remedial Action Plan states “The isolated exceedance of lead in the northern portion of the site is co-located with PAHs and will be removed by excavation. However, in this area of the site, lead will not drive cleanup because of the potential for lead contamination from the Golden Gate Bridge.”

The Golden Gate Bridge Highway and Transportation District began repainting the Golden Gate Bridge with zinc-based paint in 1965. The repainting was completed in 1995. Any current bridge paint work which has the potential to disturb leftover lead-based paint includes abatement procedures which preclude environmental contamination from lead-based paint. Therefore, the sentence “However, in this area of the site, lead will not drive cleanup because of the potential for lead contamination from the Golden Gate Bridge.” should be removed from the document.

**Comment 5: The BBDA 1A FS-RAP site-specific human health risk assessment uses soil-to-skin adherence factors (SAFs) that are insufficiently health protective. The document must use SAFs which are more health-protective in the human health risk assessment.**

Section B4.1 (Exposure Assumptions for Recreational Receptors at BBDA 1A) of Appendix B of the BBDA 1A FS-RAP states: “Soil-to-skin adherence factors (SAFs): The EF and FI terms and the SAFs used for Presidio-wide recreational PRGs and for the BBDA 1A recreational receptor are provided in Table B-1. The EPA default SAFs of  $0.07 \text{ mg/cm}^2$  (for adults) and  $0.2 \text{ mg/cm}^2$  (for children) were used, rather than the SAFs for a rugby player of  $0.23 \text{ mg/cm}^2$  (adult) and  $0.3 \text{ mg/cm}^2$  (child) in the Cleanup Level Document.”

The “default EPA SAFs” for adults and children described above were obtained from the US EPA 2002 document “Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites”. The values listed are for residential exposures, which assume significant time spent indoors. A more appropriate comparison for child recreational exposures can be found in the US EPA document “Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), July 2004” lists child SAFs of  $0.3 \text{ mg/cm}^2$  (95th percentile weighted AF for children playing both indoor and outdoor at a day care center) and  $3.3 \text{ mg/cm}^2$  (95th percentile weighted AF for children playing in wet soil). It should be noted that the SAF of  $0.3 \text{ mg/cm}^2$  is the same value used in the Presidio-Wide Cleanup Level Document. 95<sup>th</sup> percentile exposure values are generally considered to be more health protective than mean exposure values, since they account for the more highly exposed groups in the population. The BBDA 1A FS-RAP should use either the child SAFs of  $0.3 \text{ mg/cm}^2$  or  $3.3 \text{ mg/cm}^2$  described above in the human health risk assessment calculations.

Additionally, the US EPA 2002 document lists an adult outdoor worker SAF of 0.2 mg/cm<sup>2</sup>. This scenario more closely matches a recreational exposure at BBDA 1A, which could well involve vigorous physical activity and windy conditions, both of which would maximize dermal exposure. Either the adult outdoor worker SAF of 0.2 mg/cm<sup>2</sup> or the SAF for an adult rugby player of 0.23 mg/cm<sup>2</sup> listed in the Presidio-Wide Cleanup Level Document should be used in the human health risk assessment calculations.

**Comment 6: The BBDA 1A FS-RAP site cleanup must be based on the assumption of unlimited land use for the site, and therefore must base the contamination removal action on a residential scenario.**

The following comment was made in the DTSC comment memo: “However, for the sake of presenting a complete suite of remedial alternatives for risk management purposes, the HERO recommends that a removal action based on a residential scenario be evaluated and included in this report.” This is a comment on a prior draft of the BBDA 1A FS-RAP, which was not implemented in the current version of the BBDA 1A FS-RAP. The RAB agrees with the comment in the DTSC memo; a removal action based on a residential scenario should be evaluated and included in this report. Additionally, since NPS has the expectation of unlimited land use without restrictions for BBDA 1A, the site cleanup should be based on this scenario. To do otherwise would be to impose a *de facto* land use restriction on the BBDA 1A area.

## **References**

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